

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO. LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
GOOGLE LLC, and MICROSOFT CORPORATION
Petitioners,

v.

EYESMATCH LTD.,
Patent Owner.

Case No. IPR2024-00810¹
U.S. Patent No. 8,982,110

**PATENT OWNER'S OBJECTIONS TO PETITIONERS'
DEMONSTRATIVES**

¹ IPR2025-00296 has been joined with this proceeding.

Pursuant to the Board’s Order Setting Oral Argument (Paper No. 41), Patent Owner EyesMatch Ltd. submits its objections to Petitioner Google LLC’s demonstrative exhibits for the oral hearing in this matter on September 17, 2025. Patent Owner certifies that it and Petitioner have met and conferred in an attempt to resolve the objections but were unable to do so.

Petitioners’ Slide No. 20

Patent Owner objects to the entirety of Petitioners’ Slide No. 20. This slide presents new argument regarding how the asserted Grounds disclose or render obvious the challenged claims that were not presented in the Petition, and are subject to Patent Owners’ pending Motion To Strike (Paper No. 42).

Dr. Karam’s Declaration Describes Mirror Mimicking Consistent with Three-Part Construction

b. Image Flipping

53. Flipping an image captured by a camera about a theoretical vertical axis was a well-known technique in the field of image formation and computer vision that allowed for the image to mimic a mirror’s reflection. See, e.g., Ex. 1010 (Hartley) at 38. This image flipping transformation falls under the group of isometry transformations, which is mathematically represented by a group of matrices. Ex.

f. Image Resizing and Field of View Transformation

65. As is also commonly known, a reflection of a user in a traditional mirror appears, to the user, to be the same size regardless of the user’s point of view. By contrast, the size of a user image captured by a camera and displayed on a display generally changes depending on the position and orientation of the camera relative to the user. It is therefore common in the field of multiple-view geometry modelling to transform an image to alleviate this problem via a scaling or perspective transformation. Ex. 1010 (Hartley) at 166-67, 170, Fig. 6.8. For example, a well-

66. Generally, as a user moves away from the camera, the camera can be optically zoomed in and refocused on the user, such that the focal length is increased, and the image of the user is magnified. Ex. 1010 (Hartley) at 167. However, images captured using a lens with a longer focal length generally correspond to a smaller field of view. Ex. 1010 (Hartley) at 167, 169. The “tracking and zooming” approach described above is well-known and alleviates this problem, such that the size of the user remains fixed within a displayed camera image. Ex. 1010 (Hartley) at 167. This approach is well-known in the field of multiple-view geometry modeling and image formation and can be applied digitally (Ex. 1010 (Hartley) at 7, 166-170, 202-204, Figs. 6.7, 6.8, 8.5) to correct the user image based on the camera’s distance to the user to match the size of the image that the user would see in a mirror.

IPR2024-00810: Karam Decl. (Ex. 1003), ¶¶ 53, 64-66.

Page 20 of 31 DEMONSTRATIVE EXHIBIT – NOT EVIDENCE 20

“reversed reflection”

“double the distance,” “same size”

Petitioners' Slide No. 24

Patent Owner objects to the entirety of Petitioners' Slide No. 24. This slide presents new argument and evidence, including new prior art, regarding how the asserted Grounds disclose or render obvious the challenged claims that were not presented in the Petition, and are subject to Patent Owners' pending Motion To Strike (Paper No. 42).

Dr. Karam's Reply Declaration Responds to Dr. Forsyth's Testimony

"double the distance"

"reversed reflection"

"same size"

Patent. For example, *Straka* (Ex. 1037), which was published in the 2011 Scandinavian Conference on Image Analysis (SCIA 2011), explains:

A virtual mirror needs to simulate the properties of a real mirror as accurate as possible. When standing in front of a mirror at a distance d , the mirror image of oneself appears exactly at the same distance but behind the mirror. However, even though this distance can change, the size of the user in the mirror image when projected on the mirror surface stays constant at half the height h of the user.

Straka (Ex. 1037), 637. *Straka* illustrates this effect in Figure 1(b) below:

13. Third, the '109 Patent explains that, when one looks at a mirror, one's image appears to be reverse, left and right, but not top and bottom. '109 Patent (Ex. 1021), 2:33-40. This mirror effect was also well known to a person of ordinary skill in the art, and left-right inversion was performed on camera-captured images to mimic mirror reflections. For example, *Rosenberg* discloses inverting left-right camera-captured images by flipping the image pixels around a vertical axis so that the right side of the user appears on the right side of the display, and the left side of the user appears on the left side of the display (from the user's perspective). *Rosenberg* (Ex. 1006), [0003], [0025]-[0027], [0035], [0041], [0061], [0077].

IPR2024-00810: Karam Reply Decl. (Ex. 1033), ¶¶9, 13;
IPR2024-00810: *Straka* (Ex. 1037), 3.1, FIG. 1(b);
IPR2024-00810: Petitioner's Opposition to Motion to Strike (Paper 45), 1-10.

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Petitioners' Slide No. 25

Patent Owner objects to the entirety of Petitioners' Slide No. 25. This slide presents new argument and evidence, regarding how the asserted Grounds disclose

or render obvious the challenged claims that were not presented in the Petition, and are subject to Patent Owners' pending Motion To Strike (Paper No. 42).

Dr. Karam's Reply Declaration Responds to Dr. Forsyth's Testimony

mimic mirror reflections. For example, *Rosenberg* discloses inverting left-right camera-captured images by flipping the image pixels around a vertical axis so that the right side of the user appears on the right side of the display, and the left side of the user appears on the left side of the display (from the user's perspective).
Rosenberg (Ex. 1006), [0003], [0025]-[0027], [0035], [0041], [0061], [0077],

Rosenberg discloses "reversed reflection"

Rosenberg discloses "double the distance" and "same size"

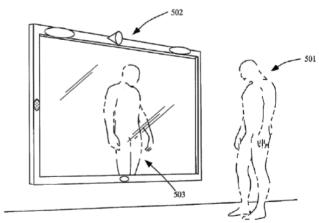


Fig. 5

Rosenberg (Ex. 1006), Fig. 5, [0077].

14. Thus, a POSITA would understand that when a prior art reference talks about a digital mirror emulating a traditional mirror or a conventional mirror, it would have the properties of a conventional mirror, such as reversed reflection, appearing at roughly double the distance, and maintaining roughly the same size regardless of the user movement.

IPR2024-00810: Karam Reply Decl. (Ex. 1033), ¶¶13-14; *Rosenberg* (Ex. 1006), FIG. 5, [0077];
IPR2024-00810: Petitioner's Opposition to Motion to Strike (Paper 45), 1-10.

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Dated: September 16, 2025

Respectfully submitted.

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CERTIFICATION OF SERVICE (37 C.F.R. §§ 42.6(e), 42.105(a))

The undersigned hereby certifies that on September 16, 2025, copies of the foregoing were served via Electronic Mail to the following:

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