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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.; AND
SAMSUNG ELECTRONICS AMERICA, INC.
Petitioners

v.

IMAGE PROCESSING TECHNOLOGIES, LLC
Patent Owner

IPR2017-01190
Patent 6,717,518 B1

Before JONI Y. CHANG, MIRIAM L. QUINN, and
SHEILA F. McSHANE, *Administrative Patent Judges.*

McSHANE, *Administrative Patent Judge.*

DECISION
Instituting *Inter Partes* Review
35 U.S.C. § 314(a) and 37 C.F.R. § 42.108

I. INTRODUCTION

A. Background

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of claim 39 ("the challenged claim") of U.S. Patent No. 6,717,518 B1 (Ex. 1001, "the '518 patent") pursuant to 35 U.S.C. §§ 311–319. Paper 2 ("Pet."). Image Processing Technologies, LLC ("Patent Owner") filed a Preliminary Response to the Petition. Paper 6 ("Prelim. Resp.").

We have authority under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted "unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the Petitioner would prevail with respect to at least 1 of the claims challenged in the petition." *See* 37 C.F.R. § 42.4(a) ("The Board institutes the trial on behalf of the Director.").

We determine that Petitioner has demonstrated that there is a reasonable likelihood that it would prevail with respect to the one challenged claim. For the reasons described below, we institute an *inter partes* review of claim 39 of the '518 patent.

B. Related Proceedings

The parties indicate that a related matter is: *Image Processing Technologies LLC v. Samsung Elecs. Co.*, No. 2:16-cv-00505-JRG (E.D. Tex.). Pet. 1, Paper 4, 1. The parties also indicate that *inter partes* review petitions have been filed for other patents asserted in the district court action. Pet. 1–2; Paper 4, 1.

C. The '518 Patent

The '518 patent is titled "Method And Apparatus For Detection Of Drowsiness," and was filed as PCT application No. PCT/EP99/00300 on January 15, 1999, and issued on April 6, 2004. Ex. 1001, [22], [45], [54], [86]. The '518 patent claims priority to application FR 98 00378, dated January 15, 1998 and application PCT/EP98/05383, dated August 25, 1998. *Id*. at [30]. The application entered the U.S. national stage as application No. 09/600,390, meeting the requirements under 35 U.S.C. § 371 on February 9, 2001. *Id*. at [21], [86].

The '518 patent is directed to applying a generic image processing system in order to detect a person's drowsiness. Ex. 1001, 2:1–5, 2:32–40. In order to accomplish that, the driver's blink rate is detected using a video camera in a car. *Id*. at 6:28–57. The system first detects a driver entering the vehicle, by use of pixels "moving in a lateral direction away from the driver's door." *Id*. at 25:24–39. A driver's head is detected by identifying pixels with selected characteristics, with the pixels loaded in histograms as depicted in Figure 24, reproduced below. *Id*. at 5:64–65, 26:46–49.

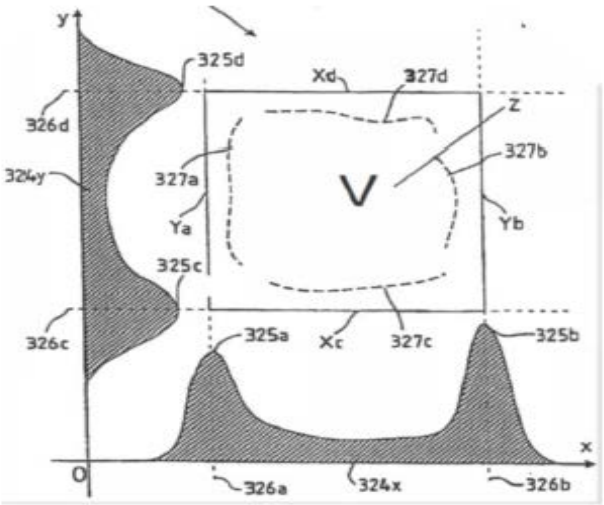

Figure 24, above, illustrates the detection of the edges of a head using histograms. Ex. 1001, 5:64–65. The head edges are detected by looking for peaks in the histogram. *Id*. at 26:49–65. The system then masks portions of an image, and continues to analyze only the unmasked portions. *Id*. at 26:66–27:10; *see also id*. at Fig. 25. The system then uses an anthropomorphic model to set sub-areas for further analysis. *Id*. at 27:31–38. Figure 26, reproduced below, shows the derivation of a sub-area. *See id*. at 27:31–38.

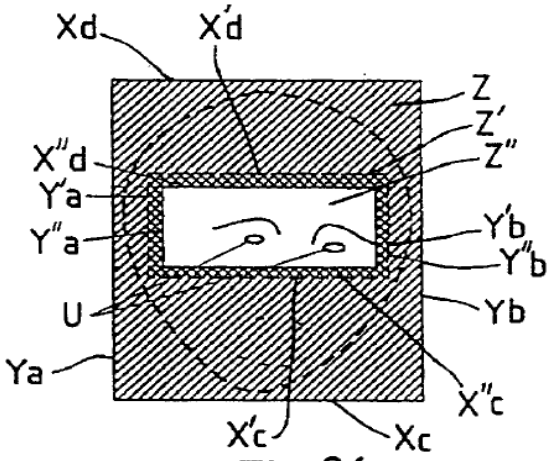

Fig. 26

Figure 26, above, depicts masking outside the eyes. Ex. 1001, 6:1–2. The '518 patent includes a variety of methods to identify blinking, including use of histograms to determine whether eyes are open or closed as depicted in Figure 27, reproduced below. *Id*. at 27:52–28:14.

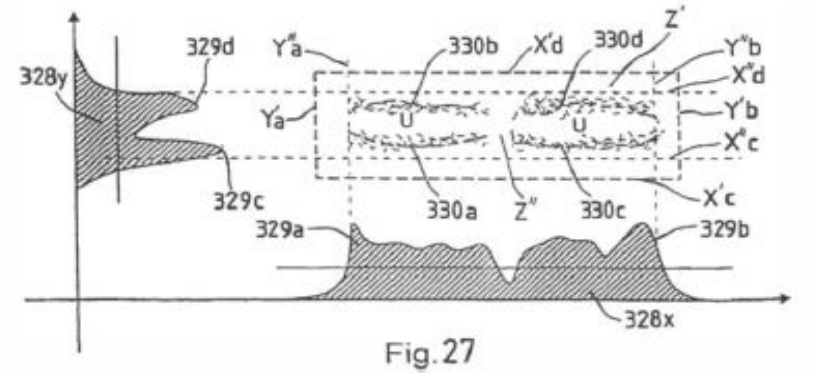

Fig. 27

The system checks for eye movement by methods including analyzing the pixels within area Z' depicted above in Figure 27. Ex. 1001, 27:52–55. The peaks of the histogram shown in Figure 27, above, are used to determine whether an eye is open or closed. *Id*. at 28:32–29:10. Characteristics of features in a search box, such as, such as "a moving eyelid, a pupil, iris or cornea, a shape corresponding to an eye, a shadow corresponding to an eye, or any other indicia indicative of an eye," may also be analyzed. *Id*. at 30:56–59.

Claim 39, with added formatting and paragraph annotations, is reproduced below.

> 39. A process of detecting a feature of an eye, the process comprising the steps of:
>
> [a] acquiring an image of the face of the person, the image comprising pixels corresponding to the feature to be detected;
>
> [b] identifying a characteristic of the face other than the feature to be detected;
>
> [c] identifying a portion of the image of the face comprising the feature to be detected using an anthropomorphic model based on the location of the identified facial characteristic;
>
> [d] selecting pixels of the portion of the image having characteristics corresponding to the feature to be detected;

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