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.

GESTURE TECHNOLOGY PARTNERS LLC
Patent Owner

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Inter Partes Review Case No. IPR2021-00921
U.S. Patent No. 8,878,949

SUPPLEMENTAL DECLARATION OF DR. BENJAMIN B. BEDERSON

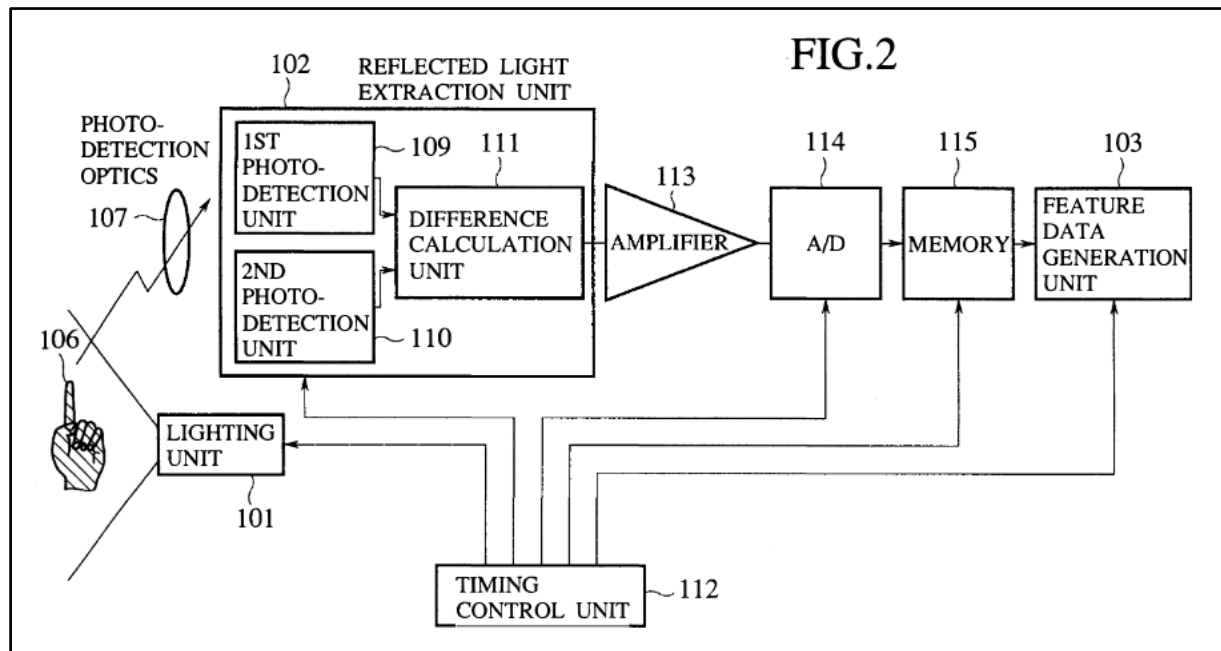I, Benjamin B. Bederson, hereby declare the following:

1.   My name is Benjamin B. Bederson, Ph.D and I am over 21 years of age and otherwise competent to make this Declaration. I make this Declaration based on facts and matters within my own knowledge and on information provided to me by others.

2.   I submitted an initial declaration in support of Apple's petition for *Inter Partes* Review of U.S. Patent No. 8,878,949 ("the *'949 Patent*"). I understand the PTAB instituted the requested review and that the proceeding involves the full scope of the proposed grounds addressed in my initial declaration. I have been asked to address a few additional issues in response to Patent Owner's Response (Paper 10) and Patent Owner's expert's declaration (Ex. 2002).

I.   **Patent Owner identifies no technical barriers to implementing a combination of Numazaki's gesture recognition and videoconference functionalities**

3.   In my original declaration, I described the reflected light extraction unit of Numazaki's first embodiment, and I explained why a PHOSITA would have understood both the third and fifth embodiments use it. To start, I described the reflected light extraction unit with reference to Numazaki's Fig. 2, describing it as a "two-camera structure for detecting a user's gestures." Ex. 1003, ¶ 34. I proceeded to describe how the reflected light extraction unit relies on a timing control unit to turn lighting unit 101 on when the first camera 109 is active and off when the second
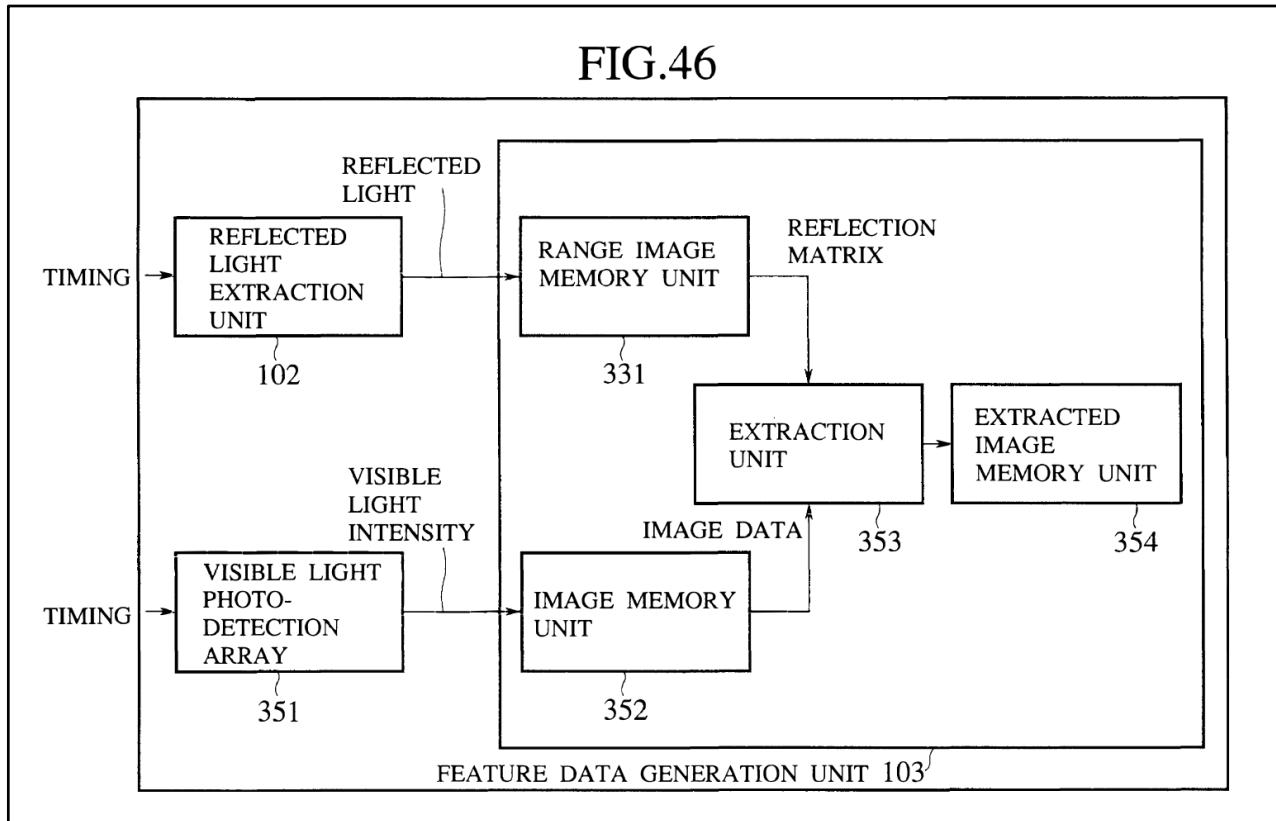
camera unit 110 is active. The difference of these images is obtained by difference calculation unit 111 and used by feature data generation unit 103 to determine gestures. *Id.* at ¶¶ 34-35 (citing Ex. 1004 , Fig. 2, 11:9-39, 11:43-51, 10:57-66).

FIG.2

Id. at ¶ 34 (citing Ex. 1004, Fig. 2).

4.   Next, I described Numazaki's third embodiment and its use of the same feature data generation unit as the first embodiment to convert gestures into commands. Ex. 1003, ¶ 31. I detailed how this embodiment uses a shape memory unit 332 to identify when the user has performed a pre-registered gesture and instructs the device to implement a command corresponding to it, such as "instructing the power ON/OFF of the TV, the lighting equipment, etc." *Id.* at ¶ 36 (citing Ex. 1004 at 31:3-10).

5. I then described how the fifth embodiment uses image capture for videoconference applications with reference to Numazaki's Fig. 46. This embodiment pairs the same reflected light extraction unit 102 of the first embodiment with a visible light photo-detection array 351, using these two imaging components to subtract all extraneous, background image information from the captured video of subject to arrive at image information containing only the subject. Ex. 1003, ¶ 38 (citing Ex. 1004, 39:6-16, 39:12-60, 40:32-35).

FIG.46

Id. at (citing Ex. 1004, Fig. 46).

6. Next, my original declaration stated several reasons why the third and fifth embodiments both rely upon the same reflected light extraction unit 102 from

the first embodiment. *Id.* at ¶¶ 40-42. I then discussed Nonaka's image capture gesture teachings (*id*. at ¶¶ 46-47) and explained why a PHOSITA would have been motivated by Nonaka to combine Numazaki's third and fifth embodiments in its eighth embodiment laptop "such that a user could perform a gesture command (pursuant to its third embodiment) that causes video capture to initiate (pursuant to its fifth embodiment). *Id*. at ¶¶ 48-51.

7.   I understand Patent Owner raises an issue related to the proposed combination requiring the output of reflected light extraction unit 102 be processed by (1) the third embodiment's feature data generation unit when detecting gestures and (2) the fifth embodiment's feature data generation unit when implementing videoconference functionality. Paper 10, 12-16. Specifically, citing its expert, Patent Owner argues that the petition "does not explain how these specialized units would operate simultaneously or whether different units would operate at different times or what that timing functionality would require." Paper 10, 16 (citing Ex. 2002, ¶ 58).

8.   Patent Owner and its expert misread the combination, which expressly defines the sequential nature in which the third and fifth embodiment units separately process unit 102's output. The petition states "a PHOSITA would have been motivated to implement this gesture recognition as a means of allowing the user to initiate (or turn on) the fifth embodiment's videoconferencing functionality." Paper 1, 31. The combination proposes the gesture detecting functionality of the third

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