

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

QUALCOMM INCORPORATED,
Patent Owner.

IPR2018-01281
Patent 8,768,865 B2

Before DANIEL N. FISHMAN, MICHELLE N. WORMMEESTER, and
AMANDA F. WIEKER, *Administrative Patent Judges*.

FISHMAN, *Administrative Patent Judge*

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

Apple Inc. (“Petitioner”) requests *inter partes* review of claims 1–6,
8–25, 27–30, 46–49, and 51–53 (the “challenged claims”) of U.S. Patent

IPR2018-01281
Patent 8,768,865 B2

No. 8,768,865 B2 (“the ’865 patent,” Ex. 1001) pursuant to 35 U.S.C. §§ 311 *et seq.* Paper 2 (“Petition” or “Pet.”). Qualcomm Incorporated (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Based on the record before us at that time, we instituted an *inter partes* review of all challenged claims and all grounds. Paper 7 (“Decision on Institution” or “Dec. on Inst.”).

Patent Owner filed a Patent Owner’s Response (Paper 18 “PO Resp.”), Petitioner filed a Reply (Paper 22 “Reply”), and Patent Owner filed a Sur-reply (Paper 25 “Sur-reply”).

We heard oral argument on October 30, 2019 and a transcript of that hearing is in the record. Paper 33.

Upon consideration of the complete record, we determine that Petitioner has proven, by a preponderance of the evidence, that claims 1–3, 5, 6, 8–22, 24, 25, 27–30, 46–49, and 51–53 are unpatentable. However, Petitioner has failed to show, by a preponderance of the evidence, that claims 4 and 23 are unpatentable.

B. Real Parties-In-Interest and Related Matters

Apple Inc. is identified as the sole real party-in-interest. Pet. 77. The parties inform us that the ’865 patent was asserted against Petitioner in the litigation *Qualcomm Inc. v. Apple Inc.*, No. 3:17-cv-02402 (S.D. Cal.). Pet. 77; Paper 4, 1. Petitioner further informs us that the above-identified litigation has been dismissed. Paper 17. The parties further inform us that the ’865 patent is at issue in *inter partes* review Case IPR2018-01282. Pet. 77; Paper 4, 1.

C. The ’865 Patent

The ’865 patent is generally directed to “machine learning of situations via pattern matching or recognition for use in or with mobile

communication devices.” Ex. 1001, 1:21–23. According to the ’865 patent, mobile communication devices (e.g., cellular and smart phones) may feature a number of sensors (built-in or otherwise supported) such as “accelerometers, gyroscopes, magnetometers, gravitometers, ambient light detectors, proximity sensors, thermometers, location sensors, microphones, cameras, etc.” *Id.* at 1:34–37. The ’865 patent states that a popular feature of such mobile devices is using such sensors to better understand what a user is presently doing so as to better assist the user in his/her present activity. *Id.* at 1:42–47. However, according to the ’865 patent, the growing number of sensors generates a high volume of data to be captured and analyzed and, thus, creates challenges to efficiently and effectively capture and process such voluminous data. *Id.* at 1:47–60.

Specifically, the ’865 patent identifies challenges for such mobile devices as follows:

These challenges may include, for example, detecting or “picking up” patterns from a large number of information sources with an unknown or different subset of sources being relevant to different situations or contexts. In other words, in some instances, it may be somewhat difficult to detect or recognize an existing pattern if such a pattern is not pre-defined or pre-specified in some manner for a certain information source. Another challenge with typical approaches may be, for example, identifying one or more relevant situations and learning patterns that are correlated with or correspond to these relevant situations. Consider, for example, a multi-dimensional information stream captured or obtained via a variety of sensors with respect to a typical “return-home-after-work” experience of a user.

Id. at 7:8–21. The ’865 patent further identifies challenges of the prior art as follows:

As seen, because of an increased dimensionality of an information stream due, at least in part, to a large variation of

sensor-tracked parameters indicative of user-related events or conditions (e.g., walking, driving, fidgeting, etc.), finding exact or approximate matches to a template, pre-defined or otherwise, may be rather difficult. In other words, at times, a relatively large number of varying parameters or variables associated with a multi-dimensional sensor information stream may be difficult to track, correlate, process, associate, etc., which in turn may limit the ability of a mobile device to react to different situations, make relevant inferences, or otherwise be aware of its context with sufficient accuracy. In addition, certain varying parameters or variables may be irrelevant to a particular user situation or context, in which case it may be important or otherwise useful to identify irrelevant or incidental variables so as to ignore or omit one or more corresponding irrelevant patterns from consideration, as described below.

Id. at 7:40–57.

The '865 patent purports to address these challenges by monitoring “one or more conditions or events of interest,” rather than continuously monitoring all or most of the available sensor information. *Id.* at 7:64–8:1. In particular, according to the '865 patent, a subset of parameters associated with a condition or event of interest may be “fixed in some manner and stored in a suitable database.” *Id.* at 8:12–15. The parameter values associated with the condition or event may be fixed, for example, “by associating corresponding parameters or variables having a particular, distinct, or otherwise suitable pattern to represent the condition or event.” *Id.* at 8:19–21. “A suitable processor may then look or search for a pattern match, exact or approximate, in one or more other signal-related patterns every time a condition or event-related pattern occurs, for example, by utilizing a ‘snapshot,’ in whole or in part, using any suitable pattern matching processes or algorithms.” *Id.* at 8:25–31.

Figure 4 of the '865 patent is reproduced below.

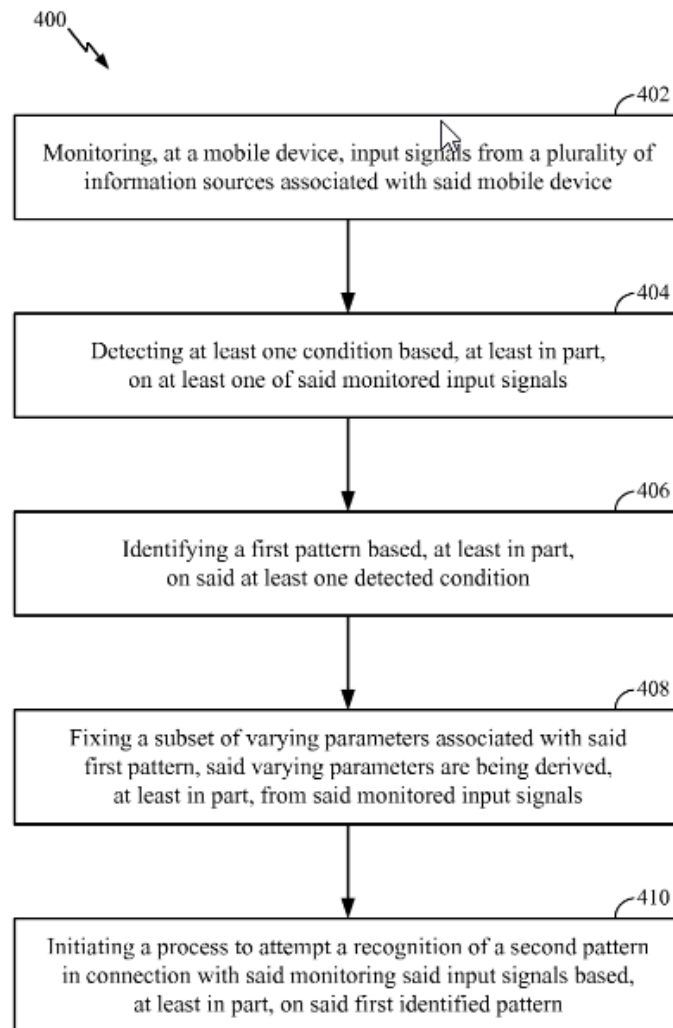


FIG. 4

Figure 4 is a flowchart of exemplary process 400 for machine learning of situations in a mobile device using pattern matching or recognition. *Id.* at 2:8–11. Step 402 monitors input signals from a plurality of sources (sensors) associated with the mobile device. *Id.* at 14:43–46. Step 404 detects at least one condition or event of interest based on at least one of the monitored input sources. *Id.* at 14:54–57. At step 406, a “first pattern may be identified based, at least in part, on at least one detected condition or event,” e.g., “a distinct signal-related pattern having one or more varying

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