



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
13/226,059 09/06/2011 Luben Hristov Hristov 080900.1214 2873

12323 7590 02/22/2018
Baker Botts L.L.P./Atmel Corporation
2001 Ross Avenue
SUITE 700
Dallas, TX 75201

Table with 1 column: EXAMINER

LEIBY, CHRISTOPHER E

Table with 2 columns: ART UNIT, PAPER NUMBER

2697

Table with 2 columns: NOTIFICATION DATE, DELIVERY MODE

02/22/2018

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptomail1@bakerbotts.com
ptomail2@bakerbotts.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* LUBEN HRISTOV and STEPHAN THALER

---

Appeal 2017-009940  
Application 13/226,059  
Technology Center 2600

---

Before BRUCE R. WINSOR, BETH Z. SHAW, and  
JOSEPH P. LENTIVECH, *Administrative Patent Judges*.

SHAW, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants seek our review under 35 U.S.C. § 134(a) of the Examiner's Non-Final Rejection of claims 1, 4, and 6–20, which represent all the pending claims. App. Br. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

## INVENTION

Appellants' invention is directed to touch sensors. *See* Spec. ¶ 1.

Claim 1 is illustrative and is reproduced below, with disputed limitations italicized:

1. A method comprising:
  - conducting a first signal to a first source electrode external to a touch sensor, the first source electrode capacitively coupled to a first measuring electrode of a plurality of measuring electrodes of the touch sensor through a touch object;
  - measuring a mutual capacitance between the first source electrode and the first measuring electrode while conducting the first signal;
  - conducting a second signal to a second source electrode external to the touch sensor, the second source electrode capacitively coupled to a second measuring electrode of the plurality of measuring electrodes of the touch sensor through a second touch object;
  - measuring a mutual capacitance between the second source electrode and the second measuring electrode while conducting the second signal; and
  - determining the touch object touching the touch sensor at a detected touch position by *comparing* the measured mutual capacitance between the first source electrode and the first measuring electrode with the measured mutual capacitance between the second source electrode and the second measuring electrode and *selecting the touch object based on the relative magnitude of the measured mutual capacitance between the first source electrode and the first measuring electrode and the measured mutual capacitance between the second source electrode and the second measuring electrode.*

## REJECTIONS

The Examiner rejected claims 1, 4, 6–9 and 11–20 under 35 U.S.C. § 102(b) as anticipated by, or, in the alternative, under 35 U.S.C. § 103(a) as obvious over, Bytheway (US 2009/0135148 A1; May 28, 2009). Non-Final Act. 3.

The Examiner rejected claim 10 under 35 U.S.C. § 103(a) as being obvious over Bytheway and Weaver (US 2012/0127114 A1; May 24, 2012). Non-Final Act. 22.

### CONTENTIONS AND ANALYSIS

Appellants argue the Examiner erred in finding Bytheway teaches comparing the measured mutual capacitance between the first source electrode and the first measuring electrode with the measured mutual capacitance between the second source electrode and the second measuring electrode and selecting the touch object based on the relative magnitude of the measured mutual capacitance between the first source electrode and the first measuring electrode and the measured mutual capacitance between the second source electrode and the second measuring electrode, as recited in claim 1. App. Br. 18. Appellants do not persuade us of error in the Examiner's findings. We agree with and adopt the Examiner's findings and conclusions, as discussed in more detail below. *See* Non-Final Act. 2–23; Ans. 2–6.

Appellants argue that Bytheway's disclosure of "using drive electrodes within a touch sensor to determine the position of an object near the touch sensor does not [disclose the disputed limitation]." App. Br. 19–20. Appellants also argue that distinguishing between two users in a particular manner does not teach the disputed limitation. App. Br. 18.

However, we agree with the Examiner's finding that Bytheway discloses a system for detecting mutual capacitance in Figure 1 and paragraphs 5–13. Ans. 3. Moreover, we agree with the Examiner's findings that:

paragraph [0046] disclos[es] a situation in which a driver and a passenger are trying to access the same controls. Different controls are made viewable for either the driver or user

“depending upon the identity of the person whose finger is approaching the common control panel.” Paragraph [0028] describes that the touchpad can detect a signal and that different signals can be coupled to different objects at the same time. These different objects are then not only detectable, but the touchpad can also distinguish between the different objects. Paragraph [0029] describes that the touchpad is capable of detecting any difference in the waveforms that can be imposed on them. . . . **detecting a difference in two waveforms in view of each other is a disclos[ure] of comparing those two waveforms/signals.** Paragraphs [0046] and [0028]–[0029] are of the same related invention but in two different embodiments.

Ans. 5–6.

In the Reply Brief, Appellants argue that Bytheway’s disclosure of distinguishing between objects does not teach selecting a touch object based on the relative magnitude of the measured mutual capacitance, and that there would be no motivation to modify Bytheway to teach the claimed limitation. Reply Br. 2. We are not persuaded by these arguments. As the Examiner explains, Bytheway discloses the disputed limitation of “selecting the touch object based on the relative magnitude of the measured mutual capacitance,” at least because Bytheway teaches that “different signals can be coupled to different objects at the same time. These different objects are then not only detectable, but the touchpad can also distinguish between the different objects.” Bytheway ¶ 28. Moreover, Bytheway teaches that the touchpad is “capable of detecting any difference in the waveforms that can be imposed on them.” *Id.* at ¶ 29. To the extent Appellants argue their claimed method of selecting differs from Bytheway, Appellants’ Specification does not

explain *how* the claimed comparing or selecting is performed. Ans. 3.

Rather, Appellant’s Specification states in part that

[c]ertain signals provided by signal source 33 to source electrode 38 may be a current or voltage in the form of a pulse, a square wave, a sinusoidal wave, or other form of periodic oscillation; however, other signals may not have periodic oscillation. Each change of the voltage applied to source electrode 38 may result in the transfer of charges on electrode 22.

Spec. ¶ 26. Appellants’ Specification states that “mutual capacitance 37 is measured by measuring the amplitude on the induced signal over measuring electrode 22; however, any suitable frequency may be used.” *Id.* Bytheway also measures and distinguishes between different signals, for example by detecting differences in the waveforms detected on the touchpad. Bytheway ¶¶ 28–29. We note, for emphasis, that one of the characteristics of Bytheway’s waveforms is magnitude. *See* Bytheway ¶ 10.

Appellants have not explained persuasively *why* these portions of Bytheway do not teach “selecting the touch object based on the relative magnitude of the measured mutual capacitance.”<sup>1</sup> Appellants provide insufficient evidence proving that the Specification or claims limit the claimed selecting in a way that, under a broad but reasonable interpretation, is not encompassed by Bytheway’s teachings.

For these reasons, we are not persuaded by Appellants’ arguments. Appellants do not persuasively distinguish claim 1 from Bytheway’s

---

<sup>1</sup> We note that 35 U.S.C. § 112 “puts the burden of precise claim drafting squarely on the applicant.” *In re Morris*, 127 F.3d 1048, 1056 (Fed. Cir. 1997).

Appeal 2017-009940  
Application 13/226,059

disclosures, or proffer sufficient evidence to show that the Examiner's findings are in error. Accordingly, we sustain the rejection of claim 1. With respect to the remaining claims, Appellants present no additional arguments. App. Br. 20. For the same reasons as discussed with respect to claim 1, we sustain the rejection of the remaining pending claims.

DECISION

The decision of the Examiner to reject claims 1, 4, and 6–20 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED