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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STUART C. SALTER, PIETRO BUTTOLO, and
JEFFREY SINGER

Appeal 2015-006420
Application 13/534,126
Technology Center 2600

Before ALLEN R. MacDONALD, KEVIN C. TROCK, and
ADAM J. PYONIN, *Administrative Patent Judges*.

MacDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

Exemplary Claims

Exemplary claims 1, 10, and 13 under appeal read as follows (emphasis added):

1. A proximity switch comprising:

a sensing pad; and

a proximity sensor disposed near a perimeter of the sensing pad and generating an activation field proximate to the sensing pad, said proximity sensor comprising first electrode fingers having *multiple lengths* interdigitated with second electrode fingers having *multiple lengths*, wherein *differing spacings* exist between adjacent first and second electrode fingers.

10. A proximity switch comprising:

a sensing pad; and

a proximity sensor disposed substantially around a perimeter of the sensing pad and comprising inner electrode fingers interdigitated and electrically coupled to outer electrode fingers to generate an activation field proximate to the sensing pad, wherein the inner and outer electrode fingers each have *different lengths* and *different spacings* exist between adjacent electrode fingers on one side of the sensing pad as compared to another side of the sensing pad.

13. A lamp and proximity switch assembly comprising:

a lens having a transparent window

a light source disposed to illuminate light through the transparent window of the lens; and

a proximity sensor disposed substantially around a perimeter of the transparent window and generating an activation field proximate to the transparent window, said proximity sensor comprising a plurality of interdigitated electrode fingers having *differing lengths and spacings* between adjacent electrode fingers.

Rejection on Appeal

The Examiner rejected claims 1–20 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Wnuk (US 6,774,505 B1; Aug. 10, 2004) and ATMEL (*Touch Sensors – Design Guide*; Atmel Corporation; Revision D - April 2009).¹

*Appellants' Contentions*²

1. Appellants contend that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 103(a) because:

Appellant submits that the first and second interdigitated electrode fingers cited by the Examiner in ATMEL each have the same length and have an equal spacing between adjacent electrode fingers. In contrast, ***Appellant's claimed invention employs*** first electrode fingers having ***multiple lengths*** interdigitated with second electrode fingers having multiple lengths, wherein ***differing spacings*** exist between adjacent electrode fingers. Appellant respectfully submits that ATMEL at page 4-3 simply does not teach or even suggest first and second interdigitated electrode fingers each having multiple lengths and differing spacings between adjacent electrode fingers. Instead, page 4-3 and FIG. 4-3 of ***ATMEL clearly shows*** interdigitated fingers all having the ***same length and the same spacing*** between adjacent electrode fingers, and section 4.2.2.5 merely discusses optimizing SNR (signal to noise ratio) by maximizing the coupling length.

App. Br. 9–10, emphasis added.

¹ As to this rejection, our decision as to the rejection of claims 1, 10, and 13 is determinative. Therefore, except for our ultimate decision, the rejection of claims 2–9, 11, 12, and 14–20, is not discussed further herein.

² These contentions are determinative as to the rejections on appeal. Therefore, Appellants' other contentions are not discussed herein.

2. Appellants further contend that the Examiner erred in rejecting claim 10 under 35 U.S.C. § 103(a) because:³

Appellant submits that the first and second interdigitated electrode fingers cited by the Examiner in ATMEL each have the same length and have an equal spacing between adjacent electrode fingers. In contrast, *Appellant's claimed invention employs* a proximity sensor disposed substantially around a perimeter of the sensing pad and comprising inner electrode fingers interdigitated and electrically coupled to outer electrode fingers, the inner and outer electrode fingers each *having multiple lengths and different spacing* between adjacent electrode fingers on one side of the sensing pad as compared to another side of the sensing pad. Appellant respectfully submits that ATMEL at page 4-3 simply does not teach or even suggest inner and outer interdigitated electrode fingers each having multiple lengths and differing spacings between adjacent electrode fingers. Instead, page 4-3 and FIG. 4-3 of *ATMEL clearly shows* interdigitated fingers all having the *same length and the same spacing* between adjacent electrode fingers, and section 4.2.2.5 merely discusses optimizing SNR by maximizing the coupling length.

App. Br. 14, emphasis added.

3. Appellants further contend that the Examiner erred in rejecting claim 13 under 35 U.S.C. § 103(a) because:

Appellant submits that the interdigitated electrode fingers cited by the Examiner in ATMEL each have the same length and have an equal spacing between adjacent electrode fingers. In contrast, *Appellant's claimed invention employs* a lens, a light source and a proximity sensor disposed substantially around a perimeter of a transparent window of the lens, wherein the proximity sensor comprises a plurality of interdigitated electrode fingers *having differing lengths and spacings between adjacent*

³ As we discuss further *infra*, the argued language “multiple lengths” and “differing spacings” is not recited in claim 10. Rather, claim 10 recites “different lengths” and “different spacings.”

electrode fingers. Appellant respectfully submits that ATMEL at page 4-3 simply does not teach or even suggest interdigitated electrode fingers having differing lengths and spacings between adjacent electrode fingers. Instead, page 4-3 and FIG. 4-3 of *ATMEL clearly shows* interdigitated fingers all having the *same length and the same spacing* between adjacent electrode fingers, and section 4.2.2.5 merely discusses optimizing SNR by maximizing the coupling length.

App. Br. 16–17, emphases added.

Issue on Appeal

Did the Examiner err in rejecting claims 1, 10, and 13 as being obvious?

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellants’ arguments that the Examiner has erred.

As to Appellants’ above contention 1 (covering claim 1), we agree-in-part. Appellants argue the Examiner erred because the claimed “multiple lengths” is not shown in ATMEL, as its plural lengths are all the same length. We disagree. Beyond implicitly arguing that “multiple” must be construed as “differing,” Appellants present no arguments as to the meaning of the term “multiple.” In our review, we are unable to find the term “multiple” in Appellants’ disclosure as filed. Therefore, we turn to dictionary definitions to construe this term. We find no definition that supports Appellants’ position. Rather, we find the most relevant definition to be “consisting of, having, or involving several or many individuals, parts,

elements, relations, *etc.*; manifold.”⁴ Based on this definition, we construe the limitation of “multiple lengths” to merely require “plural lengths.” That is, each claimed electrode finger has a length out of the plural lengths. We find no restriction on the particular lengths based on the term “multiple.” Rather, as in AMTEL, all the plural lengths may be the same value.

Further as to contention 1, Appellants argue the Examiner erred because the claimed “differing spacings” is not shown in ATMEL, as its plural spacings are all the same (i.e., the same width). We agree.

As to Appellants’ above contention 2 (covering claim 10), Appellants argue the Examiner erred because the claimed “multiple lengths” is not shown in ATMEL, as its plural lengths are all the same length. Also, Appellants argue the Examiner erred because the claimed “differing spacings” is not shown in ATMEL, as its plural spacings are all the same (i.e., the same width). As written, we find these arguments unhelpful as neither term appears in claim 10. Rather, claim 10 recites “different lengths” and “different spacings.” Therefore, using our discretion, we substitute the actual terms of claim 10 into Appellants’ arguments in place of “multiple lengths” and “differing spacings.” Read in this light, we agree with both arguments.

As to Appellants’ above contention 3 (covering claim 13), Appellants argue the Examiner erred because the claimed “differing lengths” is not shown in ATMEL, as its plural lengths are all the same length. Also, Appellants argue the Examiner erred because the claimed “differing

⁴ The Random House Dictionary of the English Language, Second Ed. Unabridged; 1983; p. 1263.

spacings” is not shown in ATMEL, as its plural spacings are all the same (i.e., the same width). We agree with both arguments.

CONCLUSIONS

(1) Appellants’ arguments and the Panel’s analysis have established that the Examiner erred in rejecting claims 1–20 as being unpatentable under 35 U.S.C. § 103(a).

(2) On this record, these claims have not been shown to be unpatentable.

DECISION

The Examiner’s rejection of claims 1–20 is reversed.

REVERSED