UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTOPHER RODD SPEIRS

Appeal 2008-0880
Application 10/310,729
Technology Center 2600

Decided: July 23, 2008

Before KENNETH W. HAIRSTON, ANITA PELLMAN GROSS, and MARC S. HOFF, *Administrative Patent Judges*.

HAIRSTON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant seeks our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

INVENTION

Appellant's claimed invention is directed to:

> an arrangement for driving a display device with columns and rows in which different voltages may be fed to the display device's columns in dependence on the data to be displayed, with two supply voltage lines carrying a maximum and a minimum column voltage, wherein at least one voltage divider unit is arranged between the supply voltage lines for the generation of divided voltage values, and a supply of the divided voltage values to column output circuits is provided, with a column output circuit comprising at least one switching matrix and/or amplifier unit, and wherein switches enable the switching matrix and/or amplifier units to be disconnected from the supply voltage lines, and other switches enable one of the supply voltages to be switched to a column output.
> (Spec. 2:12-20).

Claim 1, reproduced below, is representative of the subject matter on appeal:

1. An arrangement comprising:

a display device with columns and rows,

a column driver that is configured to provide voltages to the columns of the display device in dependence upon the data to be displayed,

two supply voltage lines carrying a maximum and a minimum column voltage, and

a processor that is configured to control the column driver, wherein

the column driver includes:

at least one voltage divider unit that is arranged between the supply voltage lines for the generation of divided voltage values, and

at least one switching matrix that is configured to couple the divided voltage values to the columns,

the processor is configured to control the column driver in a select one of two modes, such that,

in an operational mode, the column driver selectively couples the divided voltage values to the columns via the switching matrix, and

in a standby mode, the column driver is configured to:

disconnect the switching matrix from the supply voltage lines, and

selectively connect one of the supply voltages to each of the columns.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Proebsting	US 5,952,948	Sep. 14, 1999
Ho	US 6,118,439	Sep. 12, 2000
Erhart	US 6,201,522 B1	Mar. 13, 2001
Melo	US 6,243,817 B1	Jun. 5, 2001

Nakamura	US 6,411,273 B1	Jun. 25, 2002 (filed Apr. 21, 1998)
Waterman	US 6,850,218 B2	Feb. 1, 2005 (filed Dec. 18, 2000)

The following rejections are before us for review:

1. Claims 1-2, 4, 8, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho in view of Waterman and Erhart.

2. Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho in view of Waterman, Erhart, and Proebsting.

3. Claims 5-7 and 19-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho in view of Waterman, Erhart, and Nakamura.

4. Claims 9-10, 12, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho in view of Erhart and Melo.

5. Claims 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho in view of Melo, Erhart, and Nakamura.

6. Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho in view of Waterman, Erhart, and Proebsting.

We note that the Examiner's Answer is silent as to the Final Rejection of claims 1-17 under 35 U.S.C. § 112, first paragraph, and, thus, we deem the rejection withdrawn.

OBVIOUSNESS

There are four obviousness issues before us regarding whether Appellant has shown that the Examiner erred in rejecting claims 1-20 under 35 U.S.C. § 103(a).

Regarding claims 1-8 and 18-20

A. The first issue is whether the Examiner erred in determining that Ho teaches or suggests a processor as claimed.

B. The second issue is whether the Examiner erred in determining that Ho in combination with Waterman teaches or suggests that, in standby mode, the column driver disconnects the switching matrix from the supply voltage lines as claimed.

C. The third issue is whether the Examiner erred in determining that Erhart teaches or suggests selectively connecting one of the supply voltages to each of the columns as claimed.

Regarding claims 9-17

D. The fourth issue is whether the Examiner erred in determining that Melo teaches or suggests at least one amplifier unit that is configured to couple the divided voltage values to the columns.

FINDINGS OF FACT

The relevant facts include the following:

1. According to Appellant's disclosure the processor controls the standby mode (Spec. 4: 30-31) and the operational mode by means of a simple logic circuit (Spec. 5:3-10).
2. Ho teaches an LCD driver 100 (Fig. 4), which controls the standby and operational modes by means of a simple logic circuit (Fig. 7 and col. 8, ll. 1-28; i.e., LCD driver 100 sends a HIGH HALT signal for the halt mode/standby mode and a LOW HALT signal for the operational mode).

3. Ho teaches a halt mode or standby mode wherein the switches 349 and 248 are turned off (col. 8, ll. 7-9 and 16-19). Ho teaches that during standby mode there is no power supply (see second to last sentence of Ho's Abstract).
4. The Examiner used Waterman for the teaching that the use of at least one switching matrix (i.e., DAC) to couple the divided values to the columns (Ans. 4; Waterman's Fig. 3, elements 100-117 and col. 6, ll. 3-8) would accurately write voltages to the pixels (Ans. 4, Waterman's col. 2, ll. 49-51).
5. Waterman teaches placing DACs prior to the output voltages to the pixels (Fig. 3).
6. Erhart teaches selectively connecting each column to the power when the SELECT signal is high and disconnecting each column from the power when the SELECT signal is low through the multiplexers in order to reduce power consumption (col. 11, l. 38-col.12, l. 30).
7. Erhart teaches that the use of capacitor 66 is optional (col. 12, l. 28).

PRINCIPLES OF LAW

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc*., 127 S. Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed

subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 ("While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.")

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that burden is met, then the burden shifts to the Appellant to overcome the prima facie case with argument and/or evidence. *Id. In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The Supreme Court, citing *In re Kahn*, 441 F.3d at 988, stated that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. at 1741.

The claim terms should be given their broadest reasonable meaning in their ordinary usage as such claim terms would be understood by one skilled in the art by way of definitions and the written description. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

> The claims, of course, do not stand alone. Rather, they are part of a 'fully integrated written instrument' . . . consisting principally of a specification that concludes with the claims. For that reason, claims 'must be read in view of the specification, of which they are a part.' . . . . [T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'

Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005).

"[O]ne cannot show non-obviousness by attacking references individually where . . . the rejections are based on combinations of references." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

"The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference …. Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *Id.* at 425.

ANALYSIS

Claims 1-8 and 18-20

Since the third issue, issue C, is determinative of the appeal for claims 1-8 and 18-20, we will not address the first two issues, A and B.

> *C. Did the Examiner err in determining that Erhart teaches or suggests selectively connecting one of the supply voltages to each of the columns as claimed?*

Appellant argues that Erhart does not disclose connecting one of the two supply voltages to each of the columns in standby mode (App. Br. 10). Further, Appellant argues:

> Furthermore, and most significantly, M.P.E.P. § 2143.01 (V) provides that any proposed modification that would destroy the usefulness of the prior art reference is improper. Here, Ho's device would be damaged if it was modified such that one of the supply voltages was selectively connected to each of the columns during the standby mode - or even if Erhart's capacitor 66 were connected to the column lines in a standby mode. Ho's device requires the application of an AC voltage. ***Ho specifically teaches that: "A constant DC voltage***

> ***applied across the planes, however, will damage LCD 10"*** (col. 1, lines 45-46). So, modifying Ho to connect the columns to a supply voltage would render Ho's arrangement "unsatisfactory for its intended purpose," and therefore such a proposed modification is improper under M.P.E.P. § 2143.01 (V) (emphasis in original). (App. Br. 11).

The Examiner responds that Erhart uses multiplexers to connect and disconnect one of the supply voltages to each column (Ans. 13; and Fig. 4, col. 12, ll. 26-30). Furthermore, the Examiner states that the standby mode was disclosed by Ho (Ans. 13). Finally, in response to Appellant's argument that the combination of references would damage Ho's device, the Examiner states that "The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d at 425.

Erhart teaches selectively connecting each column to the power when the SELECT signal is high and disconnecting each column from the power when the SELECT signal is low, through the multiplexers, in order to reduce power consumption (Finding of Fact 6). Thus, Erhart teaches "selectively connecting one of the supply voltages to each of the columns" as claimed when the SELECT signal is high. Erhart's teaching of disconnecting the columns from the power when the signal is low would further reduce power consumption as desired by Ho's standby mode (Findings of Fact 3 and 6). However, Ho, the reference used by the Examiner for a teaching of a standby mode, discloses that in standby mode there is no power supply (Finding of Fact 3). Therefore, in the standby mode, there would

be no reason for a selective connection to one of the supply voltages, as recited in each of independent claims 1 and 18.

Thus, Appellant's argument has persuaded us of error in the Examiner's rejection of claims 1-8 and 18-20 under 35 U.S.C. § 103(a). Accordingly, we reverse the Examiner's rejection.

Claims 9-17

D. Did the Examiner err in determining that Melo teaches or suggests at least one amplifier unit that is configured to couple the divided voltage values to the columns?

Appellant argues that Melo does not disclose at least one amplifier unit that is configured to couple the divided voltage values to the columns (App. Br. 13).

Appellant further argues:

> In this regard, Applicant respectfully points out that, at most, Melo merely teaches disconnecting an amplifier unit in a **CPU bus transceiver**. Melo is not even pertinent art for the claimed invention. And in any event, Melo certainly does not disclose or suggest including at least one amplifier unit **in a column driver** that is configured to provide voltages to columns of a display device! That is, nothing in Melo teaches or suggests modifying Ho's column driver to include an amplifier in the first place!
> (App. Br. 13).

Melo teaches the use of a differential amplifier which can connect/disconnect from power supply voltage lines in a CPU environment (col. 8, ll. 11-23).

The Examiner articulated as a reason to modify Ho in view of Melo the conclusory statement of reduction of power consumption (Ans. 10).

As stated *supra*, rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. at 1741.

Thus, we are persuaded by Appellant that the Examiner erred in combining Ho with Melo because there is no articulated rationale to support the legal conclusion of obviousness. The Examiner failed to articulate motivation to transplant the amplifier of Melo from a CPU environment into the LCD system of Ho wherein the at least one amplifier unit would be configured to couple the divided voltage values to the columns as claimed. Further, Erhart fails to cure the shortcomings of Ho and Melo.

For the above reasons, Appellant's arguments have persuaded us of error in the Examiner's rejection of claims 9-10, 12 and 17 under 35 U.S.C. § 103(a), and we reverse the Examiner's rejection. Furthermore, as the rejections of claims 11 and 13-16 depend on the combination of Ho with Melo and Erhart, and neither Proebsting nor Nakamura remedies the shortcomings of that combination pointed out by Appellant, Appellant's arguments have persuaded us of error in the Examiner's rejections of claims 11 and 13-16.

CONCLUSIONS OF LAW

We conclude that Appellant has shown that the Examiner erred in rejecting claims 1-20 under 35 U.S.C. § 103(a).

ORDER

The decision of the Examiner to reject claims 1-20 is reversed.

REVERSED

KIS

NXP, B.V.
NXP INTELLECTUAL PROPERTY DEPARTMENT
M/S41-SJ
1109 MCKAY DRIVE
SAN JOSE, CA 95131