

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIDEKI KANO, H,
MICHIO TAKUMA, and
YOSHIKI NAKAZATO

Appeal No. 1999-1552
Application No. 08/678,255

ON BRIEF

Before HAIRSTON, LALL, and LEVY, Administrative Patent Judges
LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1 and 2, which constitute all the pending claims in the application.

According to appellants, the disclosed invention relates to a signal line drive circuit for an "LCD" display having a reduced chip size and circuit scale. Due to the nature of the display

elements, it is necessary to alternate the drive voltage from positive to negative values to the individual elements. In the prior art, the drive for a single channel contains "D/A converters" for both positive and negative voltages. In the present invention, the drive of two neighboring channels is combined in such a way to reduce the size of the "D/A converters" and the drivers. Specifically, looking at figure 1 of the disclosure, the drive part for two neighboring channels has a pair of registers 10L and 10R, a pair of first data latch circuits 12L and 12R, a pair of first switching circuits 14L and 14R, a pair of second data latch circuits 16L and 16R, a pair of level shifters 18L and 18R, a pair of D/A converters 20L and 20R, a pair of output amplifiers 22L and 22R, a pair of second switching circuits 24L and 24R, and a pair of output pads 26L and 26R. All positive gray-scale voltages are supplied to the left-side D/A converter 20L from gray-scale voltage generating circuit 28. On the other hand, all negative gray-scale voltages are supplied to the right-side D/A converter 20R from gray-scale voltage generating circuit 28. A further understanding of the invention can be obtained from claim 1 of which a copy is appended to this decision.

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The examiner relies on the following references:

Masumori, et al. (Masumori)	5,168,270	Dec. 01, 1992
Kanatani et al. (Kanatani)	5,414,443	May 09, 1995

Claims 1 and 2 stand rejected under 35 U.S.C § 103 as being unpatentable over Kanatani in view of Masumori.

Rather than repeat the arguments of appellants and the examiner, we make reference to the brief and the answer for the respective details thereof.

OPINION

We have considered the rejections advanced by the examiner and the supporting arguments. We have, likewise, reviewed the appellants' arguments set forth in the brief.

We reverse.

In our analysis, we are guided by the general proposition that in an appeal involving a rejection under 35 U.S.C. § 103, an examiner is under a burden to make out a prima facie case of obviousness. If that burden is met, the burden of going forward then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative

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persuasiveness of the arguments. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). We are further guided by the precedent of our reviewing court that the limitations from the disclosure are not to be imported into the claims. In re Lundberg, 244 F.2d 543, 113 USPQ 530 (CCPA 1957); In re Queener, 796 F.2d 461, 230 USPQ 438 (Fed. Cir. 1986). We also note that the arguments not made separately for any individual claim or claims are considered waived. See 37 CFR § 1.192(a) and (c). In re Baxter Travenol Labs., 952 F.2d 388, 391, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991) ("It is not the function of this court to examine the claims in greater detail than argued by an appellant, looking for nonobviousness distinctions over the prior art."); In re Wiechert, 370 F.2d 927, 936, 152 USPQ 247, 254 (CCPA 1967) ("This court has uniformly followed the sound rule that an issue raised below which is not argued in that court, even of it has been

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properly brought here by reason of appeal is regarded as abandoned and will not be considered. It is our function as a court to decide disputed issues, not to create them.”).

In response to the rejection of claims 1 and 2 under 35 U.S.C. § 103(a) over Kanatani and Masumori (answer, pages 3 and 4), appellants argue (brief at pages 4 through 6) that the modifying reference to Masumori (Fig. 10) does suggest using two D/A converters (24) having two switches (27 and 28); terminals 1 through h are first supplied a positive voltage while terminals h+1 to 2h are supplied a negative voltage, while at another time, terminals 1 through h are supplied a negative voltage and terminals h+1 through 2h are supplied a positive voltage, see column 14, lines 5 through 53. In contrast, the claimed structure supplies only positive voltage to one converter and negative voltage to another converter. The alternating of these positive and negative voltages is accomplished via the two separate switching circuits (24L and 24R in Fig. 1 of appellants' disclosure) following the converters. The examiner responds (answer, at page 5) that

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[T]here is no need of independently providing D/A converters for the cases of the input thereto changing from positive to negative or negative to positive. The Examiner believes that the D/A converter taught in the reference [Masumori] would be able to do basically the same functions as of the two D/A inverters of the applicant. . . . And regarding the switching circuits, it is inherent to have the switching circuits because they would receive the outputs from the D/A converters and select between the odd-numbered lines and even-numbered lines (see figure 10).

We are not persuaded by the examiner's reasoning that there is no need of having independent D/A converters in the system and that switching is inherent in such circuits. Instead, we agree with the appellants' position (brief at page 6) that "[i]n broad terms, the claimed architecture moves the selection or switches from before the voltage generator to after the D/A converters." In our view, the examiner has not met the burden of making a prima facie case, as required by the above guidelines, to meet the cited structure of claim 1. Therefore, we do not sustain the obviousness rejection of claim 1 and its dependent claim 2 over Kanatani in view of Masumori.

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The decision of the examiner rejecting claims 1 and 2 under
35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
)	
)	
PARSHOTAM S. LALL)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
)	
STUART S. LEVY)	
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PSL/vsh

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Appendix
Claim 1

1. A signal line drive circuit for an LCD having multiple lines of pixels arranged in columns, each pixel being coupled to a gate line terminal for receiving an activating voltage for the pixel, a common voltage terminal, and a signal line terminal for receiving an analog gray-scale voltage relative to the common voltage terminal for specifying the brightness of that pixel, said signal line drive circuit comprising for adjacent paired columns of the display:

a common terminal for coupling to the LCD's common voltage terminal;

first and second gray scale data terminals for receiving first and second digital gray-scale signals;

first and second D/A conversion circuits for common coupling to neighboring first and second signal line terminals of the LCD, for respectively generating positive and negative analog gray-scale voltages; and

a first switching circuit for cycling the first and second D/A conversion circuits between

a first operation, in which the first D/A conversion circuit generates a positive gray-scale voltage responsive to the first gray-scale data at the same time the second D/A conversion circuit generates a negative gray-scale voltage responsive to the second gray-scale data, and

a second operation, in which the first D/A conversion circuit generates a positive gray-scale voltage responsive to the second gray-scale data at the same time the second D/A conversion circuit generates a negative gray-scale voltage responsive to the first gray-scale data; and

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Appendix (cont.)
Claim 1

a second switching circuit coupling an output of the first D/A conversion circuit to a first of the adjacent columns of the display and an output of the second D/A conversion circuit to a second of the adjacent columns of the display in the first operation, the second switching circuit coupling the output of the first D/A conversion circuit to the second of the adjacent columns of the display and the output of the second D/A conversion circuit to the first of the adjacent columns of the display in the second operation.