

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 52

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JUNICHI NISHIZAWA
and YOSHIKATSU TAMAOKI

Appeal No. 1999-1687
Application No. 08/152,102

HEARD: April 12, 2001

Before HAIRSTON, GROSS, and LEVY, Administrative Patent Judges.
LEVY, 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, 4-12, and 14-27, which are all of the claims pending in this application.

BACKGROUND

Appellants' invention relates to a color display device including a plurality of luminous elements disposed on a flexible substrate in an N x M matrix. The flexible substrate

is periodically thinned to facilitate rolling of the device.

An understanding of the invention can be derived from a

reading of exemplary claim 1, which is reproduced as follows:

1. A two-dimensional color display device allowing selective generation and display of a broad range of colors, said device comprising:

a plurality of luminous elements each having luminous wavelengths different from each other collectively disposed on a flexible substrate in an N x M matrix arrangement, said flexible substrate being periodically thinned so as to facilitate rolling of the device, at least one of emission intensity and a luminous color of each of said luminous elements being separately controllable from those of other ones of said luminous elements, said controllability being conducted on the basis of selective variation of at least one of a time series pulse intensity and a width which is applied to said luminous element, such that each luminous element emits a desired emission intensity and luminous color, and a collective emission intensity and luminous color of adjacent ones of said luminous elements effect display of a desired color, one of said luminous elements being controlled so that the emission intensity thereof is different from the emission intensity of at least one other luminous element when said one and said at least one other luminous element emit light, and wherein N and M are each an integer not less than 2; and

signal wiring connected to said luminous elements, said signal wiring being arranged in a matrix.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Scheib	4,439,818	Mar. 27, 1984
Havel	4,965,561	Oct. 23, 1990

(Effective filing date: Jan. 08, 1986)

Mizushima et al.¹
(Mizushima)

50-74931

Jun. 19, 1975

Claims 1, 4-12, and 14-27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mizushima in view of Scheib and Havel.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejection, we make reference to the examiner's answer (Paper No. 46, mailed August 14, 1998) for the examiner's complete reasoning in support of the rejection, and to the appellants' brief (Paper No. 42, filed August 12, 1997), supplemental appeal brief (Paper No. 45, filed May 8, 1998), and reply brief (Paper No. 47, filed October 14, 1998) for appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the

¹ In determining the teachings of Mizushima, we will rely on the translation provided by the USPTO. A copy of the translation is attached for appellants' convenience.

rejection advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the invention as set forth in the claims. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior

art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; 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).

The examiner takes the position (answer, pages 4 and 5) that Mizushima teaches the claimed invention, with the exceptions of the flexible substrate being periodically thinned, the desired color being effected by the emission intensity and luminous color of adjacent picture elements, and the different emission intensity of the picture elements. To overcome these deficiencies in Mizushima, the examiner relies upon Scheib for a teaching of mounting a plurality of LEDs on a flexible substrate which is periodically thinned so as to facilitate rolling of the display device. The examiner takes the position (answer, pages 7 and 8) that a "flexible substrate" and a "regular hard circuit board" are used for the same purpose and "functionally perform the same function and that is supporting a plurality of display elements and their necessary wirings." According to the examiner (answer, page 5), "flexible substrates are considered as alternative equivalent of regular hard circuit boards." The examiner additionally relies upon Havel (id. at page 5) for a teaching of modulating the width of a time series pulse for separately

controlling the emission intensity of each LED. The examiner notes that collective emission intensity and luminous color effect display of a desired color.

Appellants assert (supplemental brief, page 4) that although Scheib teaches bending, Scheib does not disclose rolling of the substrate. Appellants further assert (id. at pages 2-4) that it would not have been obvious to modify Mizushima to have a periodically thinned flexible substrate. Mizushima is directed to a color video display panel which represents shapes visually. This is done by radiating light according to a shape which is to be displayed. The representation of shapes is accomplished by electronic selection or de-selection of the light generating elements, not by movement of the light displaying elements, as in Scheib. Thus, according to appellants, the essence of each of the two devices is mutually exclusive of each other, and Mizushima does not need Scheib's teachings of flexibility to represent shapes. Appellants further assert (id. at page 4) that "[t]hus, had a person of ordinary skill in the art considered Scheib and Mizushima together, they would have discerned no suggestion to modify the Mizushima display to

have periodically thinned portions, particularly since such thinned portions would have no apparent utility in Mizushima." With regard to Havel, appellants assert, (supp. answer, page 7) that Havel "has nothing to teach or suggest relevant to flexibility of substrates or periodic thinning of substrates."

We find that Scheib discloses (col. 2, lines 43-49) that

[t]he flexibility of tape **6** is improved by the removal of triangular sections **22** at selected points along the length of the tape as best shown in **FIG. 1**. The apexes of the triangular sections are oriented toward the centerline of the tape. Flexibility of the tape can be varied by varying the spacing and sizes of the removed triangular sections.

Scheib further discloses (id. at lines 53-55) that "[i]n addition, shaping of the characters is enhanced since the strip can be flexed in all three dimensions to provide any shape desired." From these teachings of Scheib, we agree with the examiner (answer, page 5) that the periodically thinned, flexible substrate of Scheib can be rolled. However, in Scheib (col. 2, line 13), LEDs form a lighting strip. The display forms a design by shaping the flexible lighting strip display into the desired shape. See e.g., Figure 3, where the display is flexed into the number 815. This contrasts with

the teachings of Mizushima of having a color picture display panel where the display of an image is produced by individually controlling the display and intensity of the LEDs. We find that Mizushima discloses (pages 2 and 3) a color picture display panel constructed from multiple luminous picture elements. The luminous elements emit the primary colors of red, green and blue. The color to be emitted from each luminous element, and the intensity of the color, is individually controlled. In Mizushima, the color picture display panel is not disclosed as being flexible. We make reference to the examiner's answer (pages 5 and 6) for the examiner's findings with respect to Havel, which have not been contested by appellants.

From the teachings of Mizushima, Scheib, and Havel, we agree with appellants that one of ordinary skill in the art would not have been taught to have modified the display of Mizushima, to provide a two dimensional color display with a periodically thinned flexible substrate.

The Federal Circuit has stated that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the

prior art suggested the desirability of the modification." In re Fritch, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), citing In re Gordon, 773 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." Para-Ordnance Mfg. v. SGS Importers Int'l, 73 F.3d 1087, 37 USPQ 2d at 1239 (Fed. Cir. 1995), citing W. L. Gore & Assocs., v. Garlock, Inc., 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13 (Fed. Cir. 1983).

Because Scheib is concerned with flexing a lighting strip to create an image, and Mizushima and Havel are concerned with creating images by individually controlling the intensity and color of LEDs in a color picture display panel, we find no suggestion to combine the teachings of the references to arrive at a M x N matrix color display panel that is flexible and is periodically thinned so as to be capable of being rolled. We agree with the examiner that both a flexible circuit board and a hard circuit board support the display elements and their wiring. However, we agree with appellants that the flexible substrate of Scheib is for creating the image displayed by the LEDs, and that Havel does not make up

for the deficiencies of Mizushima and Scheib. We find no reason to suggest providing Mizushima with a flexible display because Mizushima does not need a flexible display to create an image. The image is created by the individual control of the LEDs. Since the flexibility of the display of Scheib is for a fundamentally different purpose than the panel display of Mizushima, we find no suggestion to combine the teachings of the references in the absence of appellants' disclosure. Accordingly, we find that the examiner has failed to establish a prima facie case of obviousness of the claimed invention. As each of the independent claims 1, 4, and 5 recites a color display with luminous elements disposed on a flexible substrate in an N x M matrix, with the flexible substrate being periodically thinned so as to facilitate rolling of the device, the rejection of claims 1, 4, 5, as well as dependent claims 6-12, and 14-27 under 35 U.S.C. § 103 is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 4-12, and 14-27 under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
ANITA PELLMAN GROSS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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STUART S. LEVY)	
Administrative Patent Judge)	

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