

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. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KEVIN SCHEHRER, WILLIAM CASSARLY,
DOUGLAS McKNIGHT, RUSSELL M. HUDYMA,
JONATHAN BILES, MILLER SCHUCK and KARL ARMAGOST

Appeal No. 2003-1832
Application No. 09/222,230

ON BRIEF

Before ABRAMS, HAIRSTON, and McQUADE, Administrative Patent Judges.
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-3, 5-12, 14-20, 22-32, 34-36 and 41-44, which are all of the claims pending in this application.

We REVERSE.

BACKGROUND

The appellants' invention relates to an image generator having a miniature display device. An understanding of the invention can be derived from a reading of exemplary claim 1, which appears in an appendix to the Brief.

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

Handschy <u>et al.</u> (Handschy)	5,808,800	Sep. 15, 1998
Cobb, Jr. <u>et al.</u> (Cobb)	5,825,542	Oct. 20, 1998
Taniguchi <u>et al.</u> (Taniguchi)	6,023,253	Feb. 8, 2000 (filed Nov. 7, 1997)
Carroll <u>et al.</u> (Carroll)	6,057,966	May 2, 2000 (filed May 9, 1997)
Miyazawa	6,078,304	Jun. 20, 2000 (filed Oct. 20, 1995)

The following rejections stand under 35 U.S.C. § 103(a):

Claims 1, 2, 5, 7-12, 14, 15, 17-20, 22-24, 26, 29-32, 34-36 and 41-44 on the basis of Taniguchi in view of Cobb and Handschy.

Claims 3, 16 and 25 on the basis of Taniguchi in view of Cobb, Handschy and Miyazawa.

Claim 27 on the basis of Taniguchi in view of Cobb, Handschy and Carroll.

Claims 6 and 28 on the basis of Taniguchi in view of Cobb, Handschy, Miyazawa and Carroll.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the Answer

(Paper No. 26) for the examiner's reasoning in support of the rejections, and to the Brief (Paper No. 25) and Reply Brief (Paper No. 27) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

The appellants' invention is directed to improvements in image generators of the type having a miniature display device, such as those used in head-mounted displays. In particular, the appellants assert that their invention provides a head-mounted display that overcomes the problems in the prior art displays by being lightweight and small, yet providing high quality performance even for color video data at fast frame rates (specification, pages 1 and 2). As recited in independent claims 1 and 32, the invention comprises an illuminator which generates a source of light, a miniature reflective display device, and a beamsplitter optically coupled to the display device to produce a virtual image of the display. The beamsplitter is a reflective polarizer and comprises a film that reflects light having a first polarization component and transmits light having a second polarization component. The beamsplitter further comprises "an analyzer attached to the beamsplitter" at an angle relative to the display which is substantially not equal to

zero. As explained on pages 20 and 21 of the specification, with reference to the embodiment of the invention shown in Figure 10a, the analyzer “may be a film attached to the side of the beamsplitter [505] next to the viewing lens [531],” whereupon the beamsplitter and the analyzer pass light having a polarization opposite to the light from the light source which is reflected toward the display. The appellants state on page 10 of the Brief that in the prior art auxiliary analyzers were positioned between the beamsplitter and the lens, normal to the incident reflected light, to “clean up” unwanted polarization that was leaked by the beamsplitter, but that this arrangement gave rise to problems. According to the appellants, attaching the analyzer to the beamsplitter and orienting it so that it makes a substantial angle with the incident light solves the problems present in the prior art arrangements.

The examiner has rejected the two independent claims as being obvious¹ in view of the combined teachings of Taniguchi, Cobb and Handschy. In arriving at this conclusion, the examiner initially has found all of the subject matter recited in claims 1 and 32 to be disclosed or taught by Taniguchi, except for the requirements that (1) the

¹The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

beamsplitter comprise a film having a plurality of layers including a first layer comprising a birefringement material, and (2) that there be an analyzer attached to the beamsplitter. As to the construction of the beamsplitter, the examiner has taken the position that it would have been obvious to one of ordinary skill in the art in view of the teachings of Cobb to modify the Taniguchi display apparatus by replacing the disclosed beamsplitter with one comprising a plurality of layers including one of birefringement material because such would be “lighter in weight and more efficient.” With regard to the analyzer, the examiner opines that adding an auxiliary analyzer to the modified Taniguchi device “in the light path between the beam splitter and the viewing lens” would have been obvious in view of the teachings of Handschy. See Answer, pages 3 and 4.

We agree with the appellants that the examiner’s reasoning is defective and the rejection of claims 1 and 32 should not be sustained.

Even if it were considered, arguendo, that suggestion exists to replace the beamsplitter disclosed in Taniguchi with the type taught by Cobb, we agree with the appellants that there is no teaching in Handschy to support the obviousness of making the further modification of providing an analyzer that is “attached to” the beamsplitter, as is required by both of these claims. We first note that the examiner’s finding that Handschy would have suggested locating an analyzer “in the light path between the beam splitter and the viewing lens,” even if accepted at face value, would not result in

the claimed structure, which requires that the analyzer be “attached to” the beamsplitter. The examiner’s response to this argument (Answer, page 7) differs from the position stated in the rejection, in that it appears to be that auxiliary polarizers and auxiliary analyzers, both of which are separately disclosed by Handschy, can be considered to be equivalents, and therefore Handschy would have suggested to one of ordinary skill in the art that the polarizing film coating which, “interpreted broadly, is an attachment” to the Handschy beamsplitter, could be replaced by an auxiliary analyzer, thus meeting this limitation of the claims. However, we do not agree with the examiner that the paragraph beginning on line 66 of column 14, which states that installing a polarizing surface coating on a beamsplitter eliminates the need for an auxiliary polarizer or an auxiliary analyzer, should be interpreted as establishing the equivalency of these two elements, and no other evidence has been adduced in support of this contention. It also should be noted that the only teaching regarding the positioning of an auxiliary analyzer provided by Handschy is shown in Figure 9, where the analyzer (92) is not attached to the “beamsplitter” (unnumbered angled component within element 48) as defined by the appellants’ claims and is not at an angle to the display device (46) that is substantially not equal to zero.

The mere fact that the prior art structure could be modified does not make such a modification obvious unless the prior art suggests the desirability of doing so. In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). In the present

case, we fail to perceive any teaching, suggestion or incentive in the applied references which would have led one of ordinary skill in the art to provide the modified Taniguchi image generator with an analyzer positioned in accordance with claims 1 and 32. It would appear that the only suggestion for combining the teachings of the references in the manner proposed by the examiner resides in the luxury of the hindsight afforded one who first viewed the appellants' disclosure, which is not a proper basis for a rejection. In re Fritch, 972 F.2d 1260, 1264, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

It therefore is our conclusion that the combined teachings of Taniguchi, Cobb and Handschy fail to establish a prima facie case of obviousness with regard to the subject matter recited in independent claims 1 and 32, and we will not sustain the rejections of these claims or, it follows, of claims 2, 5, 7-12, 14, 15, 17-20, 22-24, 26, 29-31, 34-36 and 41-44, which depend therefrom.

The addition of Miyazawa to the three basic references in the rejection of dependent claims 3, 16 and 25, of Carroll for the rejection of dependent claim 27, and of Miyazawa and Carroll in the rejection of dependent claims 6 and 28, fails to overcome the deficiency discussed above with regard to the analyzer recited in independent claims 1 and 32. This being the case, the rejections of these dependent claims also are not sustained.

CONCLUSION

None of the rejections is sustained.

The decision of the examiner is reversed.

NEAL E. ABRAMS
Administrative Patent Judge

KENNETH W. HAIRSTON
Administrative Patent Judge

JOHN P. McQUADE
Administrative Patent Judge

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