

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SOO-IL CHOI

Appeal No. 2002-2015
Application No. 09/232,138

HEARD: APRIL 2, 2003

Before RUGGIERO, BARRY, 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 1-13 and 15-20¹². Claim 14 has been canceled.

¹ The rejection of claims 1-5 and 15-20 under 35 U.S.C. § 112, second paragraph, has apparently been withdrawn by the examiner (answer, page 5) who has not repeated the rejection in the examiner's answer, and states (answer, page) that "[f]or purposes of this appeal, the examiner will ignore the rejections under 112, 2nd paragraph and focus solely on the prior art rejections." See Ex parte Emm, 118 USPQ 180, 181 (Bd. App. 1957).

² An amendment (Paper No. 13, filed July 24, 2001) submitted subsequent to the final reaction (Paper No.10, mailed February 7, 2001) was denied entry by the examiner (Paper No. 14, mailed July 31, 2001).

BACKGROUND

Appellant's invention relates to a hard disk drive having a plurality of head disk assemblies. An understanding of the invention can be derived from a reading of exemplary claim 6, which is reproduced as follows:

6. A hard disk drive, comprising:

a main control board; and

a plurality of head disk assemblies, each electrically connected by connectors to said main control board and each containing at least one controller.

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

Bajorek et al. (Bajorek)	5,264,975	Nov. 23, 1993
Hatchett et al. (Hatchett)	5,422,767	Jun. 06, 1995

Claims 1-3, 6-11, 15, 16, 18, and 19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hatchett.

Claims 4, 5, 12, 13, 17 and 20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hatchett in view of Bajorek.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellant regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 20, mailed

March 26, 2002) for the examiner's complete reasoning in support of the rejections, and to appellant's brief (Paper No. 19, filed January 7, 2002) and reply brief (Paper No. 21, filed May 3, 2002) for appellant's arguments thereagainst. Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief have not been considered. See 37 CFR 1.192(a).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of anticipation and obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellant's arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer. Upon consideration of the record before us, we affirm-in-part.

We observe at the outset that appellant states (brief, page 9) that "claim 6 is considered representative of all the

independent claims and the independent claims are all argued together on the basis of that illustrative claim." Consistent with this statement, appellant's arguments are directed to independent claim 6. Accordingly, we consider claim 6 to be representative of the group. However, to the extent that appellant (brief, pages 24 and 25) additionally argues the term "plurality" in independent claim 18, claim 18 will be separately considered.

With respect to claims 4, 5, 12, 13, 17, and 20, rejected under 35 U.S.C. § 103(a), appellant states (brief, page 9) that "the claims are all argued together." Accordingly, we select claim 4 as representative of the group of claims rejected under 35 U.S.C. § 103(a).

As a preliminary matter, appellant asserts (brief, page 7) that the examiner's refusal to enter the amendment submitted subsequent to the final rejection was an "abuse of discretion." Appellant provides two appendices to the brief. The first, Appendix I, shows the claims with the proposed amendment entered. Appendix II shows the claims of record, as they stand without entry of the proposed amendment. Appellant asks (brief, page 12) that we "rule that the amendment should have been entered and

that the case it [sic] will be considered on the basis as if the amendments [sic, amendment] were entered, as they [sic, it] should have been."

We decline to rule that the amendment presented subsequent to the final rejection should have been entered. The refusal by the examiner to enter appellant's amendment after final rejection relates to a petitionable matter and not to an appealable matter. See In re Schneider, 481 F.2d 1350, 1356-57, 179 USPQ 46, 51 (CCPA 1973) and In re Mindick, 371 F.2d 892, 894, 152 USPQ 566, 568 (CCPA 1967). See also Manual of Patent Examining Procedure (MPEP) (8th Ed., August 2001) § 1002.02(c), item 3(g) and § 1201. Thus, the relief sought by the appellants would have been properly presented by a petition to the Commissioner under 37 CFR §§ 1.127 and 1.181 instead of by appeal to this Board. Because appellant has not timely petitioned the decision of the examiner refusing entry of the amendment, we find the issue to be moot. Accordingly, we will not further consider this issue, and will address the claims as they appear in Appendix II.

We begin with the rejection of claims 1-3, 6-11, 15, 16, 18, and 19 under 35 U.S.C. § 102(b) as being anticipated by Hatchett. Anticipation is a question of fact. In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). The inquiry as to

whether a reference anticipates a claim must focus on what subject matter is encompassed by the claim and what subject matter is described by the reference.

The examiner (answer, page 3) takes the position that the controller of claim 6 is met by the sub PCB 137 which performs read/write operation (data channel operation) between the heads and disks, and refers our attention to col. 5, lines 18-31 and col. 6, line 55 et seq. of Hatchett.

Appellant asserts (brief, page 18) that claim 6 recites that each of the HDAs contain at least one controller adapted for performing, responsively to the main PCB, a driving operation or a read/write operation of the disks and heads included in the HDA. Appellant argues (brief, page 14) that each HDA in the Hatchett patent includes only heads 127 and disks 135, *without* a control module integrated into each HDA."

As stated by our reviewing court in In re Hiniker Co., 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998) "[t]he name of the game is the claim."

Claim 6 recites " a main control board; and a plurality of head disk assemblies, each electrically connected by connectors to said main control board and each containing at least one

controller." Thus, although claim 6 requires that each HDA contains at least one controller, we find no recitation that each controller is responsive to the main PCB, or that the controllers are adapted for performing a driving operation or a read/write operation. We have revived the portions of Hatchett relied upon by the examiner as a teaching of each HDA containing a controller.

Hatchett discloses that controller board 17 provides the required electronic circuitry to facilitate operation and control of the HDAs 11 and 13 (col. 5, lines 18-22). Hatchett further discloses (col. 6, line 58 through col. 7, line 6) that

For the purposes of the description of the controller board 17, the two HDAs 11 and 13 will be referred to as drive A and drive B, respectively. Each drive A, B is electronically controlled by an interface microprocessor, a servo control microprocessor, several logic modules, digital/analog converters and various drivers and receivers and associated circuitry. With the exception of the data channel circuitry which is mounted on a separate channel board 137 (as shown in FIG. 6) for each drive A, B, all of the control circuitry and components are mounted on the controller board 17. While some of the components physically may be shared by the two drives A, B for efficiency and parts reduction, logically, the controller board 17 is divided into halves, one-half A, 149, providing control for drive A and the other half B, 151, provide control for drive B.

Thus, with regard to independent claim 6, the issue is whether the data channel circuitry on data channel board 137 for each

drive, performs control functions. Although not brought to our attention by the examiner, we find from our review of Hatchett (col. 7, lines 50-56) that this issue is addressed by Hatchett, who states that:

All data processing circuitry and logic including coding for write and detection and decoding operations, error detection and error correction is implemented on a separate data channel board 137 (as shown in FIG. 6) for each drive A, B coupled to its microprocessor via lines 139A and 139B, respectively.

Hatchett continues (col. 7, lines 56-62) by stating

The interface microprocessor controls the transfer of data between its respective drive A, B and the host [sic, host] computer system, read/write access of the disk media and disk defect management and error recovery. Additionally, the interface microprocessor performs diagnostics and provides monitoring of the spindle status.

From the disclosure of Hatchett, we find that even though all data processing circuitry and logic including coding for write and detection decoding operations, error detection and error correction are implemented on data channel board 137, that it is the interface microprocessor (on control board 17) that controls the transfer of data, read/write access of the disk media and disk defect management and error recovery, as well as diagnostics and monitoring of the spindle status. Thus, we find that Hatchett does not disclose control operations being performed by

the circuitry on data channel board 137. Accordingly, we find that the examiner has failed to establish a prima facie case of anticipation of independent claim 6. The rejection of claim 6 under 35 U.S.C. § 102(b) as anticipated by Hatchett is therefore reversed. Independent claims 1, 15, and 18 similarly recite that the sub PCBs are adapted for controlling, responsive to said main PCB, reading/writing of data by the heads of the HDAs. With respect to claim 18, although we agree with the examiner (answer, page 6) that the term "plurality" does not require that the disks have different storage capacities, as advanced by appellant (brief, pages 23 and 24) we cannot sustain the rejection of independent claims 1, 15, 16, and 18 because Hatchett does not teach that the sub PCBs 137 are adapted for controlling, responsively to said main PCB, reading /writing of data by the heads of the HDAs. Accordingly, the rejection of claims 1-3, 7-11, 15, 16, 18, and 19 under 35 U.S.C. § 102(b) is reversed.

We turn next to the rejection of claims 4, 5, 12, 13, 17, and 20 under 35 U.S.C. § 103(a) as unpatentable over Hatchett in view of Bajorek.

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. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); 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 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. 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).

We turn to representative claim 4. The examiner's position (answer, page 4) is that Hatchett does not disclose each of the HDAs having a head position and spindle motor controller. To overcome this deficiency in Hatchett, the examiner turns to Bajorek for a teaching of a plurality of HDAs 50 that are connected to a main PCB 51 wherein Bajorek sets forth in col. 3, line 6 et seq. that the electronic functions for controlling the HDAs are performed by components 40 which are placed inside each of the HDAs. The examiner opines (answer, page 4) that:

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide each of the HDA's of Hatchett et al with the head and spindle control circuitry taught by Bajorek et al. The rationale is as follows: one of

ordinary skill in the art would have been motivated to place the head and spindle control circuitry within each of the HDA's as doing this would permit the control circuitry to be hermetically isolated from outside environmental hazards such as dust while also permitting easy replacement of disk drives that have damaged control circuitry instead of replacing the entire main printed circuit board.

The examiner (answer, pages 5 and 6) adds that:

[T]he fact remains that both Hatchett et al and Bajorek et al use a single main PCB shared with multiple head/disk assemblies wherein each head/disk assembly has its own respective sub PCB. Thus, one of ordinary skill in the art would have found it obvious to provide each of the HDA's of Hatchett et al with the head and spindle control circuitry taught by Bajorek et al. Therefore, the combination of Hatchett et al with Bajorek et al is still seen as proper.

Appellant asserts (brief, page 19) that "the office action contains no findings as to what is the ordinary level of skill in the art, and the record lacks substantial evidence that could support such findings if they had been made." Appellant argues (brief, page 20) that the conclusionary statement by the examiner "does not tell the reviewing body whether the ordinary level of skill of the alleged routineer in the art is that of a B.S.E.E. or of a Ph.D. in Chemistry."

We are not persuaded by appellant's position that the level of ordinary skill in the art has not been established. From our review of Hatchett and Bajorek, we find that the references are

representative of the level of ordinary skill in the art. See In re Oelrich, 579 F.2d 86, 91, 198 USPQ 210, 214 (CCPA 1978) ("the PTO usually must evaluate both the scope and content of the prior art and the level of ordinary skill solely on the cold words of the literature"); In re GPAC Inc., 57 F.3d 1573, 1579, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995) (the Board did not err in adopting the approach that the level of skill in the art was best determined by the references of record); Okajima v. Bourdeau, 261 F.3d 1350, 1355, 59 USPQ2d 1795, 1797 (Fed. Cir. 2001) ("[T]he absence of specific findings on the level of skill in the art does not give rise to reversible error 'where the prior art itself reflects an appropriate level and a need for testimony is not shown.'"). One of ordinary skill in the art must be presumed to know something about the art apart from what the references expressly disclose. See In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962). See also In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985) (skill in the art must be presumed).

Appellant further asserts (brief, pages 21-24) that there is no motivation to combine the teachings of the references.

From our review of Hatchett and Bajorek, we agree with appellant (brief, page 22) that no motivation has been provided that would have suggested combining Hatchett and Bajorek in the manner necessary to meet appellant's claims. The rationale presented by the examiner (supra) merely sets forth the results that would be obtained from combining the references, and does not provide a rationale as to why an artisan would have been motivated to combine the teachings of Hatchett and Bajorek. Claim 4 recites, inter alia, that each head disk assembly comprises "a position controller for controlling movement of the head into a predetermined portion of the disk; and a spindle motor controller for controlling a spindle motor to a constant rotation speed." Hatchett discloses (col. 7, lines 13 and 14) that "[t]he servo microprocessor controls the spindle motor speed." It is further disclosed (col. 7, lines 26-29) that "[a]ll actuator control signals providing closed loop control of transducer head positioning and tracking on the disk surface are generated by the microprocessor." From the disclosure of Hatchett, we find that both head position and spindle motor speed

are controlled by the servo processor, which is on control board 17. Although Bajorek discloses (col. 3, lines 6-8) that "t]he electronic functions for controlling the disk drive are performed by components 40 and VSLI chips 41 mounted directly to the base structure," we find no suggestion, and no teaching or suggestion has been pointed to by the examiner, of moving the servo controller from the main board 17 of Hatchett and placing the servo controller on data channel board 137. In addition, even though Bajorek discloses (col. 2, lines 65-68) providing a sealed enclosure to isolate the components from contamination, Bajorek accomplishes this by providing a metal cap 35 for the assembly (figures 3 and 5), and does not disclose moving the controller functions from the main board to a sub board, because all of the disk drives share a single circuit board 51.

From all of the above, We therefore find that the examiner has failed to establish a prima facie case of obviousness of claims 4, 5, 12, 13, 17, and 20. Accordingly, the rejection of claims 4, 5, 12, 13, 17, and 20 under 35 U.S.C. § 103(a) is reversed.

New Ground of Rejection under 37 CFR § 1.196(b)

We use our authority under 37 CFR § 1.196(b) to enter a new ground of rejection of claims 6-8. Claims 6-8 are rejected under

35 U.S.C. 102(b) as anticipated by Bajorek. Beginning with claim 6, Bajorek discloses a hard disk drive (col. 2, line 31) comprising a main control board 51 (See figure 7 and col. 3, lines 23-25) and a plurality of head disk assemblies 50 (col. 3, lines 23 and 24). Each of the head disk assemblies is connected by connectors (pins 44, col. 3, lines 17-22) to the main control board 51, which connects the clustered drives to the system through the edge connector 52 (col. 3, lines 26 and 27). Each of the head disk assemblies contains at least one controller 40, 41 (col. 3, lines 6-8). Turning to claim 7, each head disk assembly 50 contains a plurality of disks for storing magnetized data and a corresponding plurality of heads for reading and writing data to and from the disks (col. 2, lines 38-40 and 58). With regard to claim 8, Bajorek discloses that the electronic functions of the disk drive are controlled by components 40 and 41 which are mounted on base 10 which in turn is mounted on control board 51 (col. 3, lines 6-8).

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-3, 6-11, 15, 16, 18, and 19 under 35 U.S.C. § 102(b) is

reversed. The decision of the examiner to reject claims 4, 5, 12, 13, 17, and 20 under 35 U.S.C. § 103(a) is reversed. A New Ground of Rejection under 35 U.S.C. § 102(b) has been entered under 37 CFR § 1.196(b) with respect to claims 6-8.

This decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b). 37 CFR § 1.196(b) provides that, "[a] new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (§ 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

REVERSED

New Ground of Rejection under 37 CFR1.196(b).

JOSEPH F. RUGGIERO)	
Administrative Patent Judge)	
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