

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DANA H. BROWN, THOMAS C. CHRISTENSEN,  
EARL A. CUNNINGHAM and WAYNE A. ROGELSTAD

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Appeal No. 97-0260  
Application 08/287,477<sup>1</sup>

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ON BRIEF

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Before THOMAS, JERRY SMITH and LALL, 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 to 3, 8 to 20 and

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<sup>1</sup> Application for patent filed August 8, 1994. According to appellants, the application is a continuation of Application 07/896,954, filed June 11, 1992, now abandoned.

Appeal No. 97-0260  
Application 08/287,477

28. Claims 4 to 7 and 21 to 27 have been canceled.

The invention concerns a method for writing servo patterns and self servo writing file in a direct access storage device. After a data storage disk file is assembled, servo information used to write and read data is written on the disk file. The need for prerecorded servo patterns often written with a servo writer system is eliminated. The invention teaches effective and efficient servo writing methods without requiring the use of a clock track or external devices. Only components of the disk file are used in writing the servo information according to the invention. Typically, a clock head has been used to overcome the circumferential timing synchronizing problem on the surface of the disk. Using the motor drive of the device or the clock frequency multiples allows synchronization with the disk surface eliminating the need for a clock head.

Claim 1 is selected as representative of the invention and is reproduced below:

1. A method for writing servo patterns in a direct access storage device including at least one data storage media mounted for rotation by a drive motor and an actuator

Appeal No. 97-0260  
Application 08/287,477

for moving transducer means relative to the data storage media for reading and writing data to the data storage media, said method comprising the steps of:

rotating said data storage media using the drive motor;

using said transducer means, writing servo information on the data storage media at a first portion of the data storage media using timing information developed without requiring the use of a clock track;

using said actuator and transducer means, moving offset from said last written servo information and detecting said written servo information until said detected servo signal equals a predetermined value;

developing timing information from said last written servo information;

using said transducer means, writing servo information on said data storage media responsive to said detected servo signal equal to said predetermined value using said timing information developed from said last written servo information without requiring the use of a clock track; and

sequentially repeating said moving, developing timing information from said last written servo information and writing steps until a second portion of the data storage media is reached.

The Examiner relies on the following reference:

Oliver et al. (Oliver)	4,414,589	Nov. 8, 1983
Janz	4,912,576	Mar. 27, 1990
Sidman	5,109,307	Apr. 28, 1992
Lewis	5,416,652	May 16, 1995

(effective filing date Oct. 12, 1990)

Appeal No. 97-0260  
Application 08/287,477

Claims 1 to 3, 8 to 20 and 28 stand rejected 35 U.S.C. § 103 over various combinations of Oliver, Janz, Sidman and Lewis.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the brief<sup>2</sup> 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.

It is our view that the rejection under 35 U.S.C. § 103 over Lewis and Janz is affirmed with respect to claims 1 through 3, 8 through 10, 15 and 16, but reversed with respect to claims 11, 12, 18, 19 and 28; the rejection under 35 U.S.C. § 103 over Lewis, Janz and Sidman is affirmed with respect to

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<sup>2</sup> A reply brief was filed on Oct. 17, 1996 [paper no. 29]. However, it was not entered in the record [paper no. 30].

Appeal No. 97-0260  
Application 08/287,477

claims 13 and 14; the rejection under 35 U.S.C. § 103 over Lewis, Janz and Oliver is affirmed with respect to claim 17, but reversed with respect to claim 20. Accordingly, we affirm in part.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness

is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is prima facie obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed

Appeal No. 97-0260  
Application 08/287,477

invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on § 103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The Examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). Our reviewing court has repeatedly cautioned against employing hindsight by using the Appellant's disclosure as a blueprint to reconstruct the claimed invention from the isolated teachings of the prior art. See, e.g., Grain Processing Corp. v. American Maize-Products Co., 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988). On the other hand, we are also guided by the precedents 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).

With this as background, we analyze the prior art applied

Appeal No. 97-0260  
Application 08/287,477

by the Examiner in the rejection of the claims on appeal. We consider the various rejections in the same order as they appear in the brief.

Rejection of claims 1 to 3, 8 to 12, 15, 16, 18 , 19 and 28  
over Lewis and Janz

We treat the independent claim 1 first. With respect to this claim, we have reviewed the Examiner's position [answer, pages 3 to 4 and 6] and Appellants' corresponding arguments [brief, pages 20 to 24]. Appellants argue that the combination suggested by the Examiner is the result of impermissible hindsight. Appellants provide little factual basis or analysis for this position other than presenting a conclusory statement [brief, pages 23 to 24]. We are of the opinion that Appellants have the burden of presenting arguments which persuade us to rule

that the suggested combination is unjustified. Here, Appellants have not so done. In addition, we note that while there must be some teaching, reason, suggestion, or motivation to combine existing elements to produce the claimed device, it is not necessary that the cited references or prior art

Appeal No. 97-0260  
Application 08/287,477

specifically suggest making the combination (see B.F. Goodrich Co. v. Aircraft Braking Systems Corp., 72 F.3d 1577, 1583, 37 USPQ2d 1314, 1319 (Fed. Cir. 1996) and In re Nilssen, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988)) as the appellants would apparently have us believe. Rather, the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Further, Appellants attack each of Lewis and Janz for not having all the attributes that the Examiner alleged the combination to possess, but Appellants do not argue how the combination lacks the alleged attributes. The Examiner states:

Appeal No. 97-0260  
Application 08/287,477

Lewis Figures 3A(a -c) and 4(a-k) meet all the limitations of claims 1, ... except for showing moving offset from said last written servo information and detecting said written servo information until said detected servo signal equals a predetermined value.

Janz Col. 12, lines 14 -32 show moving offset from said last written servo information and detecting said written servo information until said detected servo signal equals a predetermined value for the purpose of providing servo information which is more accurately positioned in the radial dimension by electronically positioning same (Janz col. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Lewis to enable it to incorporate the teaching of Janz of moving offset and detecting the servo signal until it equals a predetermined value in order to provide servo information which is more accurately positioned in the radial dimension. [Answer, pages 3 to 4].

Appellants do not question this statement. In fact, Appellants admit that "In the STW of Lewis, the clock track is replaced by a 'Master Track'" [brief, page 23]. This meets the limitation of "using timing information developed without requiring the use of a clock track" (claim 1, lines 10 to 11). Appellants further argue that "Janz provides no teaching of any timing for servo writing" [brief, page 23]. The Examiner did not rely on Janz for this teaching, but rather, used Lewis for that. Appellants have not presented any coherent

Appeal No. 97-0260  
Application 08/287,477

arguments to persuade

us against the suggested combination. Therefore, we conclude that the obviousness rejection of claim 1 over Lewis and Janz is sustained. Appellants have elected that claims 3, 8 to 10, 15 and 16 stand and fall together with claim 1 and have not argued them separately. Consequently, the obviousness rejection of claims 3, 8 to 10, 15 and 16 over Lewis and Janz is also sustained.

With respect to claim 2, "The Examiner takes the position that Lewis is a low bandwidth servo writing system which writes high-density quad-burst servo amplitude patterns with a complex frequency pattern" [answer, page 4]. Appellants present no factual argument to rebut the Examiner's position other than making a conclusory statement that "Neither Lewis or Janz disclose ... information writing steps" [brief, page 24]. Therefore, we sustain the obviousness rejection of claim 2 over Lewis and Janz.

With respect to claim 11, the Examiner believes that "the averaging of signal inputs to establish a reference is a standard engineering technique well known in the art" [answer,

Appeal No. 97-0260  
Application 08/287,477

page 4]. In our opinion, this does not meet the limitation of claim 11: "averaging of burst positions to create ... servo information"

(claim 11, lines 3 to 4). For that reason, even though Appellants have again not offered any substantial rebuttal, we do not sustain the obviousness rejection of claim 11 over Lewis and Janz.

Regarding claim 12, the Examiner has not established a prima facie case because the Examiner has not pointed out a way to meet the limitation: "moving and detecting steps include ... radial band of the disk surface" (claim 12, lines 3 to 6). Therefore, we reverse the obviousness rejection of claim 12 over Lewis and Janz.

With respect to claim 18, the Examiner has not specifically addressed the limitations: "means responsive to ... timing information" (claim 18, lines 10 to 11) and "means for ... using said timing information developed without requiring the use of a clock track" (claim 18, lines 12 to 15). In the absence of a prima facie case and in the light of Appellants' arguments [brief, pages 25 and 26], we reverse the

Appeal No. 97-0260  
Application 08/287,477

obviousness rejection of claim 18 over Lewis and Janz. Since claim 19 depends on claim 18 and contains at least the limitations discussed above regarding claim 18, we also reverse the obviousness rejection of claim 19 over Lewis and Janz.

Regarding claim 28, the Examiner has not specifically addressed, for example, the limitations: "developing timing information including a timing count value" (claim 28, lines 11 and 12) and "comparing ... burst write start count value, ... and ... burst write stop count value ... and ... revolution count value" (claim 28, lines 13 to 21). Thus, the Examiner has not established a prima facie case to reject claim 28 over Lewis and Janz. For that reason, and considering Appellants' arguments regarding claim 28 [brief, pages 27 and 28], we reverse the Examiner's obviousness rejection of claim 28 over Lewis and Janz.

Rejection of claims 13 and 14 over Lewis, Janz and Sidman

These claims are rejected as being obvious over Lewis, Janz and Sidman. Sidman's system deals with a multi-platter

Appeal No. 97-0260  
Application 08/287,477

disk drive [column 2, lines 40 to 43] which, together with the prior combination of Lewis and Janz, meets the limitations of claim 13. Appellants' arguments regarding claim 13 [brief, page 29] do not offer any factual arguments to controvert this rejection. Therefore, we sustain the obviousness rejection of claim 13 over Lewis, Janz and Sidman.

With respect to claim 14, the Examiner identifies in Sidman col. 2, lines 54-66 as a system "for duplicating servo information from a dedicated servo disk onto other disks that requires switching to a higher bandwidth servo system than used for writing to the dedicated disk" [answer, page 4]. Appellants offer no arguments in rebuttal other than a conclusory statement that "Neither[, ] Lewis, Janz nor Sidman disclose or suggest that the direct access storage device includes a high bandwidth servo system used duplicating the written servo information onto others of said data storage surfaces" [brief, pages 29 to 30]. Consequently, the obviousness rejection of claim 14 over Lewis, Janz and Sidman is sustained.

Rejection of claims 17 and 20 over Lewis, Janz and Oliver

With respect to claim 17, the Examiner adds Oliver to the

Appeal No. 97-0260  
Application 08/287,477

already suggested combination of Lewis and Janz regarding claim 1. The Examiner adds that

Oliver et al. col. 6, lines 19-34 and col. 22, lines 52-65 shows copying the servo pattern to a plurality of disks, which includes duplicating the written quad burst servo track offsets. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the copying of servo bursts to plural disks of Oliver et al. into the system of the disclosed combination in order to increase servo tracking accuracy by reducing variation in servo track offsets across the stack of disks [answer, page 5].

Appellants have not presented any arguments against the suggested combination other than a conclusory statement regarding Oliver alone, i.e., "[a]s described in Oliver et al. the servo writing carried out one head, for example head H2, the same operation is sequentially or simultaneously carried out on the remaining multiple heads H3 and H4 (column 22, lines 52-65)" [brief, pages 30 to 31]. Therefore, we sustain the obviousness rejection of claim 17 over Lewis, Janz and Oliver.

Regarding claim 20, it depends on the independent claim 18 and thus contains at least the limitations discussed above regarding the rejection of claim 18 over Lewis and Janz.

Appeal No. 97-0260  
Application 08/287,477

Oliver does not cure the deficiencies noted while discussing said rejection of claim 18, therefore, the rejection of claim 20 over Lewis, Janz and Oliver is also not sustained.

In summary, we have sustained under 35 U.S.C. § 103 the rejection of claims 1 to 3, 8 to 10, 15 and 16 over Lewis and Janz; of claims 13 and 14 over Lewis, Janz and Sidman and of claim 17 over Lewis, Janz and Oliver, while we have not sustained the rejection of claims 11, 12, 18, 19 and 28 over Lewis and Janz, and of claim 20 over Lewis, Janz and Oliver. Accordingly, the decision of the Examiner rejecting claims 1 through 3, 8 through 20 and 28 under 35 U.S.C. § 103 is affirmed in part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

Appeal No. 97-0260  
Application 08/287,477

JAMES D. THOMAS	)	
Administrative Patent Judge	)	
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JERRY SMITH	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
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Appeal No. 97-0260  
Application 08/287,477

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