UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte REED DAVID HANSON and TIMOTHY FRANCIS ELLIS

Appeal 2007-3468
Application 10/322,994
Technology Center 2600

Decided: March 11, 2008

Before MAHSHID D. SAADAT, MARC S. HOFF, and KARL EASTHOM, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1-20, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants invented a disc drive servo system that employs a scheme for compensating for variations in timing skew in a disc drive data storage system, thereby addressing the problem of misalignment of the track centers of the disc and the spin axis of the spindle motor when pre-written discs are used (Spec. 3). An understanding of the invention can be derived from a reading of exemplary independent claim 1, which is reproduced as follows:

> 1. A method of compensating for variation in timing skew in a storage device, the method comprising:
>
> (a) computing at least two timing skew values for corresponding sectors; and
>
> (b) utilizing data related to the timing skew values to compensate for timing skew variation.

The Examiner relies on the following prior art references:

Baum	US 5,774,299	Jun. 30, 1998
Nakasato	US 6,710,957 B2	Mar. 23, 2004 (filed Aug. 31, 2001)

The rejections as presented by the Examiner are as follows:

1. Claims 1-4, 9-12, and 17-20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Nakasato.
2. Claims 5-8 and 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakasato and Baum.

We make reference to the Brief and the Answer for the respective positions of Appellants and the Examiner and consider only those arguments actually made by Appellants. The arguments not made in the Brief are deemed waived (37 C.F.R. § 41.37(c)(1)(vii)).

We affirm.

ISSUES

1) Under 35 U.S.C § 102(e), does Nakasato have a disclosure which anticipates the invention set forth in claims 1-4, 9-12, and 17-20?

2) Under 35 U.S.C § 103(a), with respect to appealed claims 5-8 and 13-16, would one of ordinary skill in the art at the time of the invention have found it obvious to combine Nakasato and Baum to render the claimed invention unpatentable?

FINDINGS OF FACT

1. Appellants' disclosure defines "corresponding sectors" as sectors that substantially overlap in a vertical direction (Spec. 2:7-8) and as sectors that are substantially vertically aligned. (Spec. 6:24-25).

2. Nakasato detects the servo marks on storage magnetic discs by correcting the misalignment for dislocations of servo gates due to an eccentricity of the discs, changing of read/write head, etc. (Abstract).

3. The servo mark detection device disclosed by Nakasato records information related to the positions of servo marks (e.g., correction values such as amounts of position adjustments for correcting misalignments or dislocations of servo marks due to decentering or eccentricity of a storage medium on which the servo marks are recorded) on a storage medium at the time of manufacture thereof. (Col. 2, l. 62 – col. 3, l. 3).

4. Nakasato discloses that the misalignment or dislocation of servo marks with respect to servo gates and/or servo mark detection windows upon changing of the heads can be dealt with by storing correction values in advance at the time of changing of the heads in the storage medium

and reading the correction values so as to adjust the phases of the servo gates and/or the servo mark detection windows. (Col. 3, ll. 30-36).

5. Nakasato discloses storing the "correction values for both of the dislocations due to eccentricity and those caused upon changing of the heads in advance, whereby the phases of servo gates can be adjusted by using the eccentricity-based correction values alone before the heads are changed from one to another, alternatively by using *both the eccentricity-based correction values and the head-change-based correction values* after the changing of the heads, thus making it possible to drastically enhance the servo mark detection ratio". (Col. 3, ll. 36-45) (Emphasis added).

6. As shown in Figure 7, Nakasato obtains a correction value for the head change in addition to a correction value for an eccentricity of the storage medium when it determines that a head change takes place, upon which "[a] servo signal is output at the timing which is adjusted by the correction value for the eccentricity added by the correction value for the head change." (Col. 8, ll. 37-47).

PRINCIPLES OF LAW

1. Scope of claims

Absent an express intent to impart a novel meaning to a claim term, the words take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art. *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 (Fed. Cir. 2003). The claim construction analysis begins with the words of the claim. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Claims will "be given their broadest reasonable interpretation consistent with the

specification, and limitations appearing in the specification are not to be read into the claims". *In re Etter*, 756 F.2d 852, 858 (Fed. Cir. 1985).

2. Anticipation

A rejection for anticipation requires that the four corners of a single prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation. *See Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

ANALYSIS

1. 35 U.S.C. § 102 Rejection

Appellants dispute the Examiner's characterization of the "collection of counter correction values" in Nakasato as the claimed "computing at least two timing skew values" (Br. 4). Appellants argue that the claimed invention, as described in page 2 of the Specification, determines the "timing skew" for the corresponding sectors on different disc surfaces that substantially overlap in a vertical direction (*id.*). Appellants argue that the relied on portions in Nakasato only disclose that the counter correction values represent the amounts of displacement of the servo marks on the storage medium with respect to the reference positions of the normal or correct servo marks instead of the timing skew values for the corresponding sectors, as recited in claim 1 (Br. 5).

The Examiner responds that the counter correlation value and the correction value for an eccentricity in Nakasato are the two skew values used to compensate for the timing skew variation (Ans. 3). The Examiner

points to Figure 11 and argues that the timing skew values taught by the reference correct misalignment between the sectors on opposite surfaces of a disk when the heads are switched from the one for reading servo marks on the front to the one on the back surface (*id.*). In particular, the Examiner points out that the claims do not describe any specific relationship between sectors or a point of reference for defining the correspondence between them (Ans. 4).

Determining the scope of the claims by looking at the words recited in the claims, we find that claim 1 merely requires the sectors for which two timing skew values are computed to be *corresponding sectors*. First, we disagree with Appellants (Br. 4-5) that the claimed "timing skew values" are limited to the specific example described in page 2 of the Specification since such interpretation requires reading a specific timing skew into the claim. The Examiner correctly gave the broadest reasonable interpretation consistent with the Appellants' Specification to the claimed "timing skew values" by characterizing them as the correction values for servo marks of Nakasato (FF 2-4) due to eccentricity and head change by which the phases of the servo gates can be adjusted (FF 5). Second, the claimed "corresponding sectors" are also correctly equated by the Examiner (Ans. 3) with the portions of the opposing surfaces on a conventional disc (Fig. 11), wherein the misalignment of servo gates upon a head change on two corresponding sectors positioned on the two surfaces are shown.

Giving the broadest reasonable interpretation to the claimed phrase "timing skew values for corresponding sectors," we find that the correction values for the head change as well as for an eccentricity of the disc, as disclosed in Nakasato (FF 5-6), reads on the subject matter recited in claim

1. Nakasato describes the values to be related to the misalignment or the timing skew of the servo marks, which are collected and stored for the purpose of correcting misalignment during a head change (FF 3-4).

Additionally, contrary to Appellants' arguments that Nakasato's Figure 11 only shows one misalignment value, we note that Figure 11 is a known disc arrangement that provides for using additional counter values related to eccentricity in addition to head change (FF 5-6).

With respect to the rejection of claim 18, in addition to the above discussed points, Appellants refer to column 7 of the reference and contend that compensation for eccentricity in Nakasato is addressed independently of changing heads (Br. 8). As pointed out by the Examiner (Ans. 5), Nakasato describes the collection of counter correction values for servo marks due to a head change and also because of an eccentricity of the storage disc (FF 6). Therefore, the determination of misalignment of sectors and timing correction in Nakasato is both carried out and adjusted by the correction value for the eccentricity in addition to the correction value for the head change (FF 6).

In view of the analysis above, we find that Nakasato prima facie anticipates independent claims 1, 9, and 18 as the reference teaches all the recited features of those claims. Additionally, we note that Appellants do not argue the rejection of claims 2-4, 10-12, 17, 19, 20 separately from their base claim and thus allow these claims to fall with claims 1, 9, and 18. Therefore, we do not agree with Appellants that the Examiner erred in rejecting claims 1-4, 9-12, and 17-20 under 35 U.S.C § 102(e) as anticipated by Nakasato.

2. 35 U.S.C. § 103 Rejection

With respect to the rejection of the remaining claims, Appellants rely on similar arguments that were discussed above and merely assert that Baum does not cure the deficiencies of Nakasato (Br. 9). Accordingly, as Appellants fail to point to any error in the Examiner's position with sufficient particularity, we remain unconvinced by Appellants' arguments that the Examiner erred in rejecting claims 5-8 and 13-16 under 35 U.S.C. § 103 over Nakasato and Baum.

DECISION

The decision of the Examiner rejecting claims 1-4, 9-12, and 17-20 under 35 U.S.C. § 102 and rejecting claims 5-8 and 13-16 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

gvw

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