

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAKOTO KAWAMURA,
YOSHIYUKI AKIYAMA, YASUSHI FUJINAMI,
JUN YONEMITSU, and TOMIHIRO NAKAGAWA

Appeal No. 1999-2240
Application 08/909,349¹

ON BRIEF

Before BARRETT, DIXON, and GROSS, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed August 11, 1997, entitled "Data Recording Medium and Record/Playback Apparatus Using the Data Recording Medium," which is a continuation of Application 08/562,428, filed November 24, 1995, now abandoned, which claims the foreign filing priority benefit under 35 U.S.C. § 119 of Japanese Application 6-321602, filed November 30, 1994.

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This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1, 3, 5, 7, 9, 12, 13, 15, 16, 18, 19, and 21.

We reverse.

BACKGROUND

The disclosed invention relates to a disk-shaped data recording medium and a recording apparatus for recording data on a disk-shaped data recording medium.

Claim 1 is reproduced below.

1. A disk-shaped data recording medium on which an amount of data is to be recorded, comprising:

at least a first and a second recording layers;

a first recording direction from the inner side to the outer side of said medium and a second recording direction from the outer side to the inner side of said medium being determined as directions for recording data;

one of said first and second recording directions being used as the recording direction of said first recording layer;

the other of said first and second recording directions being used as the recording direction of said second recording layer;

each of said recording layers including a data area in which data has a sector structure, and each sector containing at least a layer number for identifying said first recording layer and said second recording layer; and

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wherein substantially one half of said amount of data to be recorded on said medium is recorded to a predetermined data area in said data area of said first recording layer, said predetermined data area being smaller than said data area available for recording the data, and the remainder of the data is recorded in said data area of said second recording layer such that a start position of the data in one of said first and second recording layers is substantially at the same radial position as a final position of the data in the other of said first and second recording layers.

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The Examiner relies on the following prior art:

Satoh et al. (Satoh)	5,428,597	June 27, 1995 (filed January 12, 1994)
Best et al. (Best)	5,513,170	April 30, 1996 (effective filing date June 4, 1991)

Claims 1, 3, 5, 7, 9, 12, 13, 15, 16, 18, 19, and 21 stand rejected under 35 U.S.C. § 112, first paragraph, based on a lack of written description.

Claims 1, 3, 5, 7, 9, 12, 13, 15, 16, 18, 19, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Best and Satoh.

We refer to the Office action (Paper No. 16), the final rejection (Paper No. 21), and the examiner's answer (Paper No. 26) (pages referred to as "EA__") for a statement of the Examiner's position, and to the brief (Paper No. 25) (pages referred to as "Br__") and the reply brief (Paper No. 27) (pages referred to as "RBr__") for a statement of Appellants' arguments thereagainst.

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OPINION

Grouping of claims

The claims are grouped to stand or fall together (Br9).
Claim 1 is analyzed as representative for each ground of
rejection.

35 U.S.C. § 112, first paragraph, lack of written
description

The rejection is based on the written description
requirement of 35 U.S.C. § 112, first paragraph, not the
enablement requirement as stated by Appellants (Br11: RBr2).

The written description rejection under 35 U.S.C.
§ 112, first paragraph, is used to reject when a claim is
amended to recite elements thought to be without support in
the original disclosure. In re Rasmussen, 650 F.2d 1212,
1214-15, 211 USPQ 323, 326 (CCPA 1981). "Satisfaction of
the description requirement insures that subject matter
presented in the form of a claim subsequent to the filing
date of the application was sufficiently disclosed at the
time of filing so that the prima facie date of invention can
fairly be held to be the filing date of the application."
Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1562,

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19 UPSQ2d 1111, 1115 (Fed. Cir. 1991), citing In re Smith, 481 F.2d 910, 914, 178 USPQ 620, 623 (CCPA 1973). "Although the exact terms need not be used in haec verba, . . . the specification must contain an equivalent description of the claimed subject matter." Lockwood v. American Airlines, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). Written description is a question of fact. Vas-Cath, 935 F.2d at 1563, 19 USPQ2d at 1116.

The Examiner finds a lack of written description in the specification for the limitation "said predetermined data area being smaller than said data area available for recording the data" as recited in independent claims 1, 5, 7, and 9.

Appellants point to portions of the specification which describe that the amount of data to be recorded is divided into two substantially equal portions which are recorded to the two recording layers such that the final end of data from the first layer and the start end of data from the second layer are at approximately the same radial position (Br11). In this way, the divided data portions are recorded to the recording layers almost symmetrically, regardless of

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the capacity of each recording layer (Br11). Because program areas of respective layers coincide, sector addresses at the same radial position can be converted by a simple XOR operation (Br11).

The specification does not expressly state that one half the amount of the data to be recorded, (the amount of data that fits in the predetermined data area), is smaller than the data area available for recording. However, the description in the specification that the total amount of data to be recorded is calculated and the pickup is turned back and moved to a lower layer upon recording a half amount of data (specification, p. 8, lines 7-13) implies that one half the data does not completely fill a layer because it does not describe recording to the end of the first layer. Thus, we find that Appellants were in possession of recording one half the data to be recorded to a predetermined data area, "said predetermined data area being smaller than said data area available for recording the data." This limitation means that data is not recorded to completely fill the first recording layer with the remainder recorded on the next layer. It is, of course, possible in

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some cases that one half the amount of data to be recorded exactly fills the data area available for recording on a layer; this situation is excluded by the claims.

The rejection of claims 1, 3, 5, 7, 9, 12, 13, 15, 16, 18, 19, and 21 under § 112, first paragraph, is reversed.

35 U.S.C. § 103(a)

Appellants make four main arguments.

First, Appellants argue that Best describes arrangement of non-data tracking marks and does not describe data portions arranged in the same manner as the tracking marks (Br16).

The Examiner responds that it is notoriously well known that the tracking tracks on the disk are representative of the data tracks as shown in Figs. 3A-3D of Best (EA6).

Appellants' argument is without merit. The tracking marks are used to keep the light beam on track (col. 6, lines 15-16). Focus, tracking, and data signals are derived from the beam from the optical head (col. 8, lines 58-67), shown as beam 144 in Fig. 3A. Data is recorded on land 134 between tracking grooves 132 and on land 138 between inverse tracking grooves 136 (raised ridges) (Fig. 3A) (col. 6,

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lines 16-19). It is clear that the data lands 134, 138 are arranged in exactly the same manner as the tracking marks (the grooves or inverse grooves) because they are interleaved with the tracking marks. Thus, Best's statements with respect to the tracking marks (col. 6, lines 41-56) apply equally to data tracks.

Second, Appellants argue that Best does not mention recording substantially half the data to be recorded in the data area of the first recording area (Br16). As to the Examiner's assertion that half the data would be recorded on each recording layer (Paper No. 16, pp. 2-3), Appellants argue that Best nowhere teaches or suggests recording half the data on the first recording layer, and the Examiner gratuitously assumes such fact (Br18).

The Examiner responds by first interpreting the claim limitation (EA6):

The examiner interprets the limitation "substantially one half of the amount of data to be recorded on the medium in [sic, is] recorded to a predetermined data area in the data area of the first recording layer" as a multi layer disc to record data therein, wherein said data is divided between the first layer and the second layer because the first layer in [sic] not sufficient to record the whole data on said first layer so that the remainder of the data that could not be recorded on

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the first layer is recorded on the second layer of the disk.

It is not understood why the Examiner interprets the limitation, because the claim is clear on its face: one half of the data to be recorded is recorded on the first recording layer and the remainder of the data (the other half) is recorded on the second recording layer. The claim limitation of recording substantially one half the data to the first recording layer says nothing about the size of the data relative to the capacity of the recording layer. Thus, the Examiner errs in interpreting the limitation to mean that the first recording layer is not sufficient to record the whole amount of data. The data to be recorded could be less than the data capacity of a recording layer; the claim requires the data to be divided between the two recording layers even though it could be recorded on one side. The data to be recorded could be greater than the data capacity of one recording layer and less than the data capacity of both layers together, but this has nothing to do with dividing the data in half.

The Examiner finds that Best teaches recording data on a first layer and then continuously on a second layer,

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"[t]herefore recording part of the data on the first layer, and the remaining part on the second layer is present in the reference as shown in column 6 lines 42-56" (EA6-7).

This reasoning does not address the claim limitation. It is possible to record part of the data on the first layer and the remainder of the data on the second layer without recording half of the data on each recording layer. Best does not describe how data is distributed when recorded and, thus, Best does not teach or suggest recording half the data in each recording layer. The limitation of recording half the data in each recording layer, coupled with the later limitation of the end and start positions being at substantially the same radial position, means that program areas of respective layers coincide so that sector addresses at the same radial position can be converted by a simple XOR operation. The Examiner has failed to establish a prima facie case of obviousness as to the limitation of recording half the data on each recording layer.

Third, Appellants argue that the Examiner has ignored the feature of the predetermined data area of the first

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recording layer area being smaller than the data area available for recording the data (Br16).

It appears that the Examiner ignores this limitation in the obviousness rejection because of the 35 U.S.C. § 112, first paragraph, written description rejection. This rejection has been reversed and, thus, the limitation must be addressed.

The limitation of "one half of said amount of data to be recorded on said medium is recorded to a predetermined data area in said data area of said first recording layer, said predetermined data area being smaller than said data area available for recording the data" requires that one half of the data to be recorded is less than the capacity of the data area of the first recording layer. This limitation distinguishes over recording data until the first recording layer is filled and then recording the remainder on the second recording layer. Best does not describe how data is distributed when recorded and, thus, Best does not teach or suggest recording half the data in a predetermined data area which is smaller than the data area of the first recording layer. Accordingly, the Examiner has failed to establish a

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prima facie case of obviousness as to this additional limitation.

Fourth, Appellants argue that neither Best nor Satoh teaches the limitation that the start position of the data in one of the recording layers is substantially at the same radial position as a final position of the data in the other recording layer (Br17).

The Examiner's position is (EA5):

[Best] shows a multi layer disk wherein the layer[s] alternate between clockwise and counter clockwise (therefore the starting position on the first layer have [sic, has] the same radial position as that of the finishing position of the second layer), in order to continuously record a data amount (movie) on the first and second layers meeting applicant's claimed invention as cited in column 6 lines 42-56.

See also Paper No. 8, pp. 2-3 ("[Best] also recites that where one spiral track ends the other spiral track begins . . .").

Best discloses (col. 6, lines 44-56):

[T]he spiral pattern . . . may alternate between clockwise and counter-clockwise spiral patterns on consecutive data layers. This alternating spiral pattern may be preferable for certain applications, such as storage of video data, movies for example, where continuous tracking of data is desired. In such a case, the beam tracks the clockwise spiral pattern inward on the first data surface until the spiral pattern ends near the inner diameter, and then the beam

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is refocused on the second data surface directly below and then the beam tracks the counter-clockwise spiral pattern outward until the outer diameter is reached.

We find that this description of "continuous tracking of data" informs one of ordinary skill that the start position of the data on the second data surface is at substantially the same radial position as the final position of the data on the first data surface because only refocusing on the second data surface (i.e., a focus jump) is required to go to the second data surface when the first data surface ends. Tracking would not be continuous if the system had to hunt for the beginning of the second data surface at a greater or lesser radius from the end of the first data surface. Appellants do not address this teaching of Best.

For the reasons discussed above, we find that Best does not teach or suggest the limitations of: (1) "substantially one half of said amount of data to be recorded on said medium is recorded to a predetermined data area in said data area of said first recording layer . . . and the remainder of the data is recorded in said data area of said second recording layer"; and (2) "said predetermined data area

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being smaller than said data area available for recording the data." Therefore, the rejection of claims 1, 3, 5, 7, 9, 12, 13, 15, 16, 18, 19, and 21 under 35 U.S.C. § 103(a) is reversed.

CONCLUSION

The rejections of claims 1, 3, 5, 7, 9, 12, 13, 15, 16, 18, 19, and 21 are reversed.

REVERSED

PATENT

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