

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 38

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HISASHI TAKANO, YOSHIBUMI MATSUDA,
and MIKIO SUZUKI

Appeal No. 1998-2476
Application No. 08/074,485

ON BRIEF

Before FLEMING, LALL, and BARRY, Administrative Patent Judges.
LALL, Administrative Patent Judge.

DECISION ON APPEAL

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This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection¹ of claims 114 through 230. Claims 1 through 113 have been canceled.

The disclosed invention is directed to a magnetic storage system. The magnetic storage system may comprise a magnetic recording medium, a data read/write device facing the magnetic recording medium, reciprocating means for reciprocating at least one of the data read/write device and the magnetic recording medium in a simple harmonic motion, moving means for either moving the data read/write device relative to the magnetic recording medium as the at least one of the data read/write device and the magnetic recording medium moves in the simple harmonic motion, or moving the magnetic recording medium relative to the data read/write device as the at least one of the data read/write device and the magnetic recording

¹ Three amendments after the final rejection were filed. The first two after the final rejection amendments (Paper Nos. 13 and 23) were denied entry by the examiner, see Paper Nos. 14 and 24. The third after the final rejection amendment (Paper No. 28) was approved to be entered by the examiner, see Paper No. 30. However, this amendment has not been entered physically into the record. It should be entered because it had been approved for entry by the examiner. The claims in the appendix attached to the brief include this amendment in the claims.

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medium moves in the simple harmonic motion, and means for maintaining a predetermined distance between the data read/write device and the magnetic recording medium. A further understanding of the invention can be obtained by the following claim.

114. A magnetic storage system comprising:

a magnetic storage medium;

a data read/write device facing the magnetic recording medium;

reciprocating means for reciprocating at least one of the data read/write device and the magnetic recording medium in a simple harmonic motion;

moving means for either (1) moving the data read/write device relative to the magnetic recording medium as the at least one of the data read/write device and the magnetic recording medium moves in the simple harmonic motion, or (2) moving the magnetic recording medium relative to the data read/write device as the at least one of the data read/write device and the magnetic recording medium moves in the simple harmonic motion; and

means for maintaining a predetermined distance between the data read/write device and the magnetic recording medium.

The examiner relies on the following references:

Gerry	3,712,723	Jan. 23, 1973
McClure	4,636,893	Jan. 13, 1987
Pohl et al. (Pohl)	4,853,810	Aug. 1, 1989
Smith	5,107,099	Apr. 21, 1992
Toupin	5,212,680	May 18, 1993

(filed Oct. 10, 1991)

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Takano et al. (Takano) 5,325,244 Jun. 28, 1994
(filed Feb. 28, 1992)

Claims 114, 119-130, 153, 178, 203, and 228 stand
rejected under 35 U.S.C. § 112, second paragraph.

Claims 114-117 stand rejected under 35 U.S.C. § 102 as
being anticipated by Toupin.

Claims 115-144, 149-169, 174-194, 199-219, and 224-230
stand rejected under 35 U.S.C. § 103 as being unpatentable
over Toupin and McClure.

Claim 118 stands rejected under 35 U.S.C. § 103 as being
unpatentable over Smith and Gerry.

Claims 145, 147, 170, 172, 195, 197, 220, and 222 stand
rejected under 35 U.S.C. § 103 as being unpatentable over
Toupin, McClure, and Takano.

Claims 146, 148, 171, 173, 196, 198, 221, and 223 stand
rejected under 35 U.S.C. § 103 as being unpatentable over
Toupin, McClure, and Pohl.

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Rather than repeat verbatim the arguments of appellants and examiner, we make reference to the brief² 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.

We reverse.

We consider the various grounds of rejection seriatim.

Rejection under 35 U.S.C. § 112, second paragraph

The examiner rejects claims 114, 119-130, 153, 178, 203, and 228 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention, final rejection at pages 3 and 4.

The examiner asserts that lines 5-6 of claim 114 are confusing. They define, id., "means for reciprocating at least one of the data read/write device and the magnetic recording medium. As best understood, this statement indicates that the reciprocating means operates either on the

² The reply brief was filed as Paper No. 33, however, the examiner did not approve the entry of this reply brief in the record. See Paper No. 35.

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transducer or the medium, or on both." Appellants respond, brief at pages 11 and 12, that the phrase in question covers six different situations regarding the movement of the respective data read/write device and the moving medium. With respect to claim 124, the examiner asserts, final rejection at page 4, that it is "indefinite because it declares, on lines 2-3, that 'the data read/write device is one of a plurality of . . . devices'. This description lacks a proper antecedent, since independent claim 114 had the limitation to 'a data read/write device'." Appellants respond, brief at page 16, that "it is submitted that claim 114 [on which claim 124 depends] does not recite a single data read/write device as apparently alleged by the Examiner, but merely recites a data read/write device."

Also, with respect to claim 124, the examiner asserts, id., that "lines 3-4 . . . define 'data read/write devices disposed in a regular two-dimensional arrangement in a plane'. This claim is indefinite if there are only two such devices, since three points are required to define a plane." Appellants respond, brief at 17 and 18, that "claim 124 does not recite that the plurality of data read/write devices

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define a plane as apparently alleged by the Examiner. Rather, claims 124 merely recites that the data read/write device is one of a plurality of data read/write devices disposed in a regular two-dimensional arrangement in a plane."

Regarding claims 153, 178, 203, and 228, the examiner asserts that they lack proper antecedent basis, the reasoning being the same as for claim 124 above where a single magnetic recording medium is recited in the independent claim and these dependent claims refer to a plurality of mediums or a plurality of heads.

Appellants respond in the same manner as they did regarding the same issue with respect to claim 124, see brief at pages 20 and 21.

The second paragraph of 35 U.S.C. § 112 requires claims to set out and circumscribe a particular area with a reasonable degree of precision and particularity. In re Johnson, 558 F.2d 1008, 1015, 194 USPQ 187, 193 (CCPA 1977). In making this determination, the definiteness of the language employed in the claims must be analyzed, not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted

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by one possessing the ordinary level of skill in the pertinent art. Id.

The examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. § 112, second paragraph, should be whether the claims meet the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. Some latitude in the manner of expression and the aptness of terms is permitted even though the claim language is not as precise as the examiner might desire. If the scope of the invention sought to be patented cannot be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. § 112, second paragraph, is appropriate.

We have reviewed the comments and statements of the examiner and the responses by appellants as outlined above. Following the guidelines stated above, we conclude that the examiner is not justified in finding the claims as indefinite. Appellants' responses to the various points raised by the examiner are self-explanatory and fully understandable to an artisan. Therefore, we do not sustain the rejection of claims

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114, 119-130, 153, 178, 203, and 228 under 35 U.S.C. § 112,
second paragraph.

Rejection under 35 U.S.C. § 102

The examiner rejects claims 114-117 as being anticipated by Toupin at page 5 of the final rejection (Paper No. 17). With respect to independent claim 114, the examiner asserts, id., that "[t]he moving means is anticipated by the piezo device, which enables relative movement between the transducer array and the substrate."

Appellants argue, brief at pages 22-28, that Toupin does not show the claimed moving means. They conclude, id. at 27, that "Toupin does not disclose both such a moving means and reciprocating means for reciprocating at least one of the data read/write device and the magnetic recording medium in a simple harmonic motion as recited in claim 114."

We agree with appellants. We find that in Toupin only the recording medium moves in a simple harmonic motion indicated by an arrow along the direction of 34 in Figure 1. The transducer array 36 in Figure 1 only moves so that the gap between the read/write head and the recording medium is

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controlled over the entire surface of the transducer array 36.
See column 3,
lines 28-43. Therefore, Toupin does not disclose or suggest
the claimed moving means.

The examiner rejects claims 115-117 at page 5 of the
final rejection. The examiner asserts, *id.*, that "[h]e
[Toupin] teaches that the 'cock angle' is controllable with
respect to the movement of the medium, which is moved
reciprocally. On lines 63-65 of column 5, Toupin states that
'relative motion . . . causes column [array] 66 to follow
tracks 64'." Appellants at pages 28-36 of the brief discuss
each of the claims in detail. We agree with appellants'
analysis. In each of these claims, we note that the movement
of the recording medium and the recording read/write device is
claimed. Toupin shows only the recording medium moving in a
simple harmonic motion. The head in Toupin does not move as
claimed.

Therefore, we do not sustain the anticipation rejection
of claims 114-117 by Toupin.

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Rejections under 35 U.S.C. § 103

Various combinations of the references are suggested by the examiner to reject various claims. We will now consider each of these combinations separately.

McClure and Toupin³

The examiner rejects claims 115-144, 149-169, 174-194, 199-219, and 224-230 as being unpatentable over McClure in view of Toupin at pages 6 to 11 of the final rejection. The examiner asserts, id. at 7, that "[i]t would have been obvious . . . to utilize McClure's piezoelectric material connected to the medium, as taught by Toupin" Appellants counter the examiner's position at pages 36-44 and 48-83 of the brief. We have reviewed the positions of the examiner and appellants and conclude that there is no motivation or reasoning to combine Toupin and McClure as each of them provides its own way of having an optimum arrangement of either the movement of the recording medium or the movement of the head while keeping the other fixed. Furthermore, the examiner has not shown how he proposes to modify Toupin by replacing the head of Toupin

³ We treat the combination of Toupin and McClure as the same as that of McClure and Toupin.

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by the moving head of McClure. We note that such an arrangement would result in the destruction of Toupin's device. Therefore, we do not sustain the obviousness rejection of claims 115-144, 149-169, 174-194, 199-219, and 224-230 over McClure and Toupin.

Smith and Gerry

The examiner rejects claim 118 as being obvious over Smith in view of Gerry at pages 7 and 8 of the final rejection. The examiner asserts, *id.* at 8, that "it would have been obvious . . . to record data along zigzag tracks, as taught by Gerry" Appellants respond at pages 44-48 of the brief that claim 118 contains, brief at 45, the limitation of "moving means for alternately moving the magnetic head and the magnetic recording medium in a simple harmonic motion during a reading or writing operation," which the examiner has not even addressed in his rejection. Appellants also argue that the zigzag pattern asserted by the examiner is not shown by the combination, because the recording surface 53 (Figure 4) in Gerry does not move at all let alone move in a zigzag fashion. See Figures 6a through 6h of Gerry. We agree with appellants' position. We note that the proposed combination

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does not produce the claimed moving means. Therefore, we do not sustain the obviousness rejection of claim 118 over Smith and Gerry.

Toupin, McClure, and Takano

The examiner rejects claims 145, 147, 170, 172, 195, 197, 220, and 222 as being unpatentable over Toupin in view of McClure and Takano at page 11 of the final rejection. Since Takano is used only to show a semiconductor laser 104 (Figure 1) for detecting the head position and not for curing the deficiency noted above in the combination of Toupin and McClure, we do not sustain the obviousness rejection of these claims over Toupin, McClure, and Takano.

Toupin, McClure, and Pohl

The examiner rejects claims 146, 148, 171, 173, 196, 198, 221, and 223 as being unpatentable over Toupin in view of McClure and Pohl at page 12 of the final rejection. Pohl is used to provide a tunnel electrode 9 (Figures 2 and 3) in the head assembly for permitting the positioning of the head assembly with a one-nanometer accuracy, and not for curing the deficiency noted above in the combination of Toupin and

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McClure. Therefore, we do not sustain the obviousness rejection of these claims over Toupin, McClure, and Pohl.

In conclusion, we have reversed the examiner's decision rejecting claims 114, 119-130, 153, 178, 203, and 228 under 35 U.S.C. § 112, second paragraph; claims 114-117 under 35 U.S.C. § 102 as being anticipated by Toupin; claims 115-144, 149-169, 174-194, 199-219, and 224-230 under 35 U.S.C. § 103 as being obvious over Toupin and McClure; claim 118 under 35 U.S.C. § 103 over Smith and Gerry; claims 145, 147, 170, 172, 195, 197, 220, and 222 under 35 U.S.C. § 103 over Toupin, McClure, and Takano; and claims 146, 148, 171, 173, 196, 198, 221, and 223 under 35 U.S.C. § 103 over Toupin, McClure, and Pohl.

REVERSED

	Michael R. Fleming)	
	Administrative Patent Judge)	
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	Parshotam S. Lall)	BOARD OF
PATENT)	
	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
	Lance Leonard Barry)	

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Administrative Patent Judge)

PSL:tdl

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Antonelli, Terry, Stout & Kraus
Suite 1800
1300 North 17th Street
Arlington, VA 22209