

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(2) is not binding precedent of the Board.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. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JONG-YOON YOON

Appeal No. 1997-2681
Application 08/211,414

ON BRIEF

Before KRASS, JERRY SMITH, and HECKER, ***Administrative Patent Judges.***

HECKER, ***Administrative Patent Judge.***

DECISION ON APPEAL

This is a decision on appeal from the final rejection of
claims 1 and 2, all of the claims pending in this application.

The invention relates to a circuit for reading out data
from a disk in a disk drive, the disk having tracks forming

Appeal No. 1997-2681
Application No. 08/211,414

concentric circles partitioned into sectors. Each sector has a first region with recorded servo data of one frequency and a second region with recorded information data of different frequencies. The read out circuit has a filter for the servo data frequency, and several filters for the different frequencies of the information data.

Representative independent claim 1 is reproduced as follows:

1. A circuit for reading out data from a disk having a plurality of tracks forming concentric circles partitioned into a plurality of sectors, each sector consisting of a first region recorded with servo data of the same frequency and a second region recorded with information data of different frequencies, said circuit comprising:

pickup means (20) for picking up said data written on said disk and converting said data into an electrical signal;

first filter means (23) for filtering signal frequencies corresponding only to the frequencies of said servo data in said picked-up electrical signal;

second filter means (24) consisting of a plurality of filters for filtering signal frequencies corresponding to each frequency of said information data in said picked-up electrical signal; and

filter selection control means (25) responsive to the outputs of said first and said second filter means for recognizing each of the different frequency bands of said data and for providing a servo signal to said first filter means to allow said first filter means (23) to be active when said picked-up electrical signal corresponds to said servo data and to allow a corresponding one of said filters in said second

Appeal No. 1997-2681
Application No. 08/211,414

filter means (24) to be active by recognizing each data frequency corresponding to data having different bands when said electrical signal corresponds to said information data.

The references relied on by the Examiner are as follows:

Fischler et al. (Fischler)	4,894,734	Jan. 16, 1990
Abbott et al. (Abbott)	5,422,760	Jun. 6, 1995
	(effective filing date Aug. 27, 1992)	

Appellant's Admitted Prior Art (APA)

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over APA considered with Fischler and Abbott¹.

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over APA considered with Abbott.

Rather than repeat the arguments of Appellant or the Examiner, we make reference to the brief, reply brief, answer and supplemental answer for the details thereof.

OPINION

After a careful review of the evidence before us, we agree with the Examiner that claims 1 and 2 are properly rejected under 35 U.S.C. § 103(a).

¹ This is a new ground of rejection, made in the Examiner's Answer.

Claim 1

The Examiner reasons on page 5 of the Answer that APA (Appellant's Figure 1) teaches the claimed invention except that the second filter (14), for information data, is not a plurality of filters. The Examiner notes that filter selection control means (15) is substantially taught since it is responsive to the outputs of all filters (although plural data information filters are missing) to allow the appropriate filter to be active. To meet the claimed plurality of filters, the Examiner cites Fischler, Figure 2, noting that a zone code (18) is used to select an information data filter (31-34) dependent on the selected zone to be reproduced. On page 6 of the Answer, the Examiner notes that Fischler does not teach selecting a data filter by recognizing the frequency band in use in the picked up signal. To fulfill this requirement, the Examiner cites Abbott's filter 48 in Figure 4. The Examiner points out that Abbott's filter 48 is adapted to the zone [frequency] selected on the disk by recognition of the incoming data stream (i.e., picked up signal). Thus, the Examiner explains, it would have been obvious to one of ordinary skill in the art at the time of invention to have

Appeal No. 1997-2681
Application No. 08/211,414

modified the APA by replacing the single information data filter (14) with the plurality of information data filters (31-34) of Fischler to optimize data reproduction. Furthermore, the Examiner explains, Fischler's filter selection could be predicated on the actual reproduced information data signal (i.e., picked up signal), since Abbott, in a similar system, teaches filter adaptation based upon the actual information data signal.

Appellant argues, "Appellant's admitted prior art does not recognize different information data frequency bands in data picked up by a pickup means...[a]ccordingly, Appellant's admitted prior art does not teach or suggest selecting from among a plurality of filters based upon such recognition." (reply brief-page 2).

We disagree. At page 2, lines 11-15, of Appellant's specification describing the prior art it states:

Currently, a zone bit recording mode is utilized to maximize the recording density of the information data, wherein the servo data has the same frequency throughout every zone on a disk, but the data on the region where the information data is recorded, is recorded and reproduced as frequencies having different bands for the respective zones.

Appeal No. 1997-2681
Application No. 08/211,414

Thus, APA does recognize different information data frequency bands in different zones. Furthermore, APA recognizes the frequency band present in the picked up signal to select the proper filter as recited in the specification at page 1, lines 22-25, wherein it states:

a signal controller 15 for recognizing the frequencies corresponding to the servo data and information data having different bandwidths from each other, and generating a signal for activating one filter corresponding to the recognized frequency;

Thus, although APA is recognizing and selecting between the servo data frequencies and the information data frequencies, the basic concept of selecting filters based upon the frequency content of the received signal is clearly taught by APA.

Appellant argues that the Examiner's alternative rationale for selecting a filter, based on Abbott, is in error because Appellant's filters are analog filters (based upon an ***In re Donaldson*** analysis), Fischler's filters are analog filters, but Abbott's filter 48 is an adaptive digital filter. (Reply brief-pages 3 and 4.)

Appeal No. 1997-2681
Application No. 08/211,414

The Examiner strongly contests the applicability of ***In re Donaldson*** (supplemental answer). However, we find that the type of filter, analog or digital, is irrelevant to the teaching cited in Abbott by the Examiner. That is, whatever the type of filter, Abbott teaches that the filter characteristics can be selected based upon the frequency in the signal being currently read.

Thus, we agree with the Examiner that claim 1 is unpatentable under 35 U.S.C. § 103(a) over APA considered with Fischler and Abbott. We find this so, for the two rationales suggested by the Examiner. First, we find that it would have been obvious to one of ordinary skill in the art to have modified APA by replacing the single information data filter with the plural information data filters in Fischler, and selecting the relevant one of Fischler's information data filters based upon the signal received from a particular sector, in the manner Abbott adapts filter 48 (answer-page 6). Secondly, and as the Examiner states "alternatively", we find that it would have been obvious to one of ordinary skill in the art at the time of invention, to have used the filter selection teaching of the APA to select the appropriate

Appeal No. 1997-2681
Application No. 08/211,414

information data filter of Fischler, just as the APA selects between the servo data filter and the information data filter (answer-page 7). Accordingly, we will sustain the Examiner's rejection of claim 1.

Claim 2

Appellant repeats the arguments made with respect to claim 1 as being applicable with respect to claim 2. In addition, Appellant emphasizes:

lines 13-18 of claim 2 specifically require that the filter control means is "responsive to the outputs of said first and second filter means" [emphasis by Appellant]. Neither Appellant's admitted prior art nor Abbott teach or suggest that a filter is programmed in response to the outputs of the filters. Abbott merely teaches [] varying the characteristic of a filter in response to a zone of a disk from which data is read. (Reply brief-pages 5 and 6.)

The Examiner responds:

The admitted prior art Figure 1 shows the outputs of filters 13 and 14 controlling signal controller 15. See pages 1 and 2 of the specification. Moreover, Abbott et al programs a filter in accordance with the data transfer rate of a selected zone. See column 10, lines 19-22 of Abbott et al. As noted on page 8 of the Examiner's Answer, "Abbott teaches in fig. 4 programming the filter (40) via the microcontroller (56) according to the selected zone." (Supplemental answer-page 3.)

Appeal No. 1997-2681
Application No. 08/211,414

We agree with the Examiner. The APA clearly teaches selection between filters based upon the reproduced signal from the disk wherein the servo data filter or the information data filter is selected to be active. Thus, the APA clearly teaches the filter control means **is responsive to** the outputs of the different filter means. Appellant implies that claim 2 requires the filter **to be programmed in response to** the outputs of the filters. We find that claim 2 recites no such requirement. Claim 2 recites that "said second filter means includes means for programming the band of said second filter means to a frequency band **corresponding to** the frequency band of said information data in said picked up signal." (emphasis added). As the Examiner points out, this requirement is met by Abbott wherein it states filter "40 is programmed so that it is optimized for the data transfer rate of the selected data zone 70 from within which the transducer head 26 is reading data." (column 10, lines 19-22). We find this clearly meets the **corresponding to** language of claim 2.

Accordingly, we will sustain the Examiner's rejection of claim 2.

Appeal No. 1997-2681
Application No. 08/211,414

It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the reasonable teachings or suggestions found in the prior art, or by a reasonable inference to the artisan contained in such teachings or suggestions. **In re Sernaker**, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). In addition, the Federal Circuit reasons in **Para-Ordnance Mfg., Inc. v. SGS Importers Int'l, Inc.**, 73 F.3d 1085, 1087-88, 37 USPQ2d 1237, 1239-40 (Fed. Cir. 1995), **cert. denied**, 117 S.Ct. 80 (1996), that for the determination of obviousness, the court must answer whether one of ordinary skill in the art who sets out to solve the problem, and who had before him in his workshop the prior art, would have been reasonably expected to use the solution that is claimed by the Appellants.

We find that those skilled in the art having the teachings of Abbott and Fischler before them would have made the obvious improvement to Appellant's APA.

In view of the foregoing, the decision of the Examiner rejecting claims 1 and 2 under 35 U.S.C. § 103(a) is affirmed.

Appeal No. 1997-2681
Application No. 08/211,414

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

AFFIRMED

	Errol A. Krass)	
	Administrative Patent Judge)	
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)	
	Jerry Smith)	BOARD OF
PATENT)	
	Administrative Patent Judge)	APPEALS AND
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Appeal No. 1997-2681
Application No. 08/211,414

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