

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHINJIRO FUKUYAMA

Appeal No. 1996-3324
Application No. 08/132,969¹

HEARD: October 5, 1999

Before KRASS, RUGGIERO and LALL, Administrative Patent Judges.
RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-7. Claims 8 and 9 have been canceled. An amendment after final rejection filed October 16, 1995 was denied entry by the Examiner.

¹ Application for patent filed October 7, 1993.

The disclosed invention relates to a D/A converting apparatus for converting a digital signal into an analog signal. More particularly, Appellant indicates at pages 2 and 3 of the specification that the outputs of additional D/A converters are connected to the maximum and minimum reference voltage inputs, respectively, of the main D/A converter. According to Appellant, the above arrangement allows the output range of the main D/A converter to be determined in a digital fashion.

Claim 1 is illustrative of the invention and reads as follows:

1. A D/A converting apparatus for converting a digital signal into an analog signal, comprising:

a first D/A converter for converting said digital signal as a first digital signal into said analog signal as a first analog signal, the output range of said first analog signal being determined by a second and a third analog signal as reference signals input to said first D/A converter;

a second D/A converter for converting a second digital signal into said second analog signal, the output range of said second analog signal being determined by two reference signals input to said second D/A converter; and

a third D/A converter for converting a third digital signal into said third analog signal, the output range of said third analog signal being determined by two reference signals input to said third D/A converter; and wherein

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said first digital signal, said second digital signal,
and said third digital signal are each
independent of each other.

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The Examiner relies on the following prior art:

Connors et al. (Connors)	4,202,042	May
06, 1980	Okuyama	5,212,482
May 18, 1993		

(Filed Aug. 16, 1991)

Data Converter Reference Manual, Analog Devices, Inc., Vol. 1, published 1992, pages 2-399 through 2-404 and 2-721 through 2-732.

The rejections of the appealed claims are set forth by the Examiner as follows:

1. Claims 1-7 stand rejected under 35 U.S.C. § 112, first paragraph, as being based on an inadequate disclosure.
2. Claims 1-4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Data Converter Reference Manual.
3. Claims 1-4, 6, and 7 stand rejected under 35 U.S.C. 102(e) as being anticipated by Okuyama.²
4. Claims 6 and 7 stand rejected under 35 U.S.C. § 103 as being unpatentable over the Data Converter Reference Manual in view of Connors.

² As indicated at page 2 of the Answer, the prior art rejections of claim 5 have been withdrawn by the Examiner.

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Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Briefs³ and Answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the Examiner, the arguments in support of the rejections and the evidence of anticipation and obviousness relied upon by the Examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellant's arguments set forth in the Briefs along with the Examiner's rationale in support of the rejections and arguments in rebuttal set forth in the Examiner's Answer.

At page 6 of the Brief, Appellant has indicated that, for purposes of this appeal, claims 1-4 stand or fall together as a single group and claims 5, 6, and 7 are to be considered separately. We will consider the claims separately only to the extent that separate arguments are of record in this

³ The Appeal Brief was filed February 15, 1996. In response to the Examiner's Answer dated March 15, 1996, a Reply Brief was filed April 3, 1996 which was entered by the Examiner without further comment on July 24, 1996.

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appeal. Dependent claims 2-4 have not been argued separately and, accordingly, will stand or fall with their base claim 1.

It is our view, after consideration of the record before us, that the disclosure of the Data Converter Reference Manual does not fully meet the invention as recited in claims 1-4. Further, it is our opinion that the disclosure of Okuyama anticipates the recited invention in claims 1-4, but we reach the opposite conclusion with respect to claims 6 and 7. We are also of the view that the evidence relied upon and the level of skill in the particular art would not have suggested the obviousness of the invention as set forth in claims 6 and 7. We also, after consideration of the record before us, reach the conclusion that the disclosure in this application does not describe the claimed invention in a manner which complies with the requirements of 35 U.S.C. § 112. Accordingly, we affirm.

The rejection of claims 1-7 under the first paragraph of 35 U.S.C. § 112.

We note that the Examiner, instead of relying on the "written description" or "enablement" language of the statute, has used the terminology "lack of support" in the statement of

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the rejection. Our reviewing court has made it clear that written description and enablement are separate requirements under the first paragraph of 35 U.S.C. § 112. Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1560, 19 USPQ 2d 1111, 1114 (Fed. Cir. 1991). The terminology "lack of support" has also been held to imply a reliance on the written description requirement of the statute. In re Higbee and Jasper, 527 F.2d 1405, 188 USPQ 488, 489 (CCPA 1976).

In view of the factual situation presented to us in this instance we will interpret the Examiner's basis for the 35 U.S.C. § 112, first paragraph rejection as reliance on the "written description" portion of the statute. "The function of the description requirement [of the first paragraph of 35 U.S.C.

§ 112] is to ensure that the inventor has possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him." In re Wertheim, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). "It is not necessary that the application describe the claim limitations exactly, . . . but only so clearly that persons of ordinary skill in the art will recognize from the disclosure that

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appellants invented processes including those limitations."
Wertheim, 541 F.2d at 262, 191 USPQ at 96 citing In re Smythe,
480 F.2d 1376, 1382, 178 USPQ 279, 284 (CCPA 1973).
Furthermore, the Federal Circuit points out that "[i]t is not
necessary that the claimed subject matter be described
identically, but the disclosure originally filed must convey
to those skilled in the art that applicant had invented the
subject matter later claimed." In re Wilder,
736 F.2d 1516, 1520, 222 USPQ 369, 372 (Fed. Cir. 1984), cert.
denied, 469 U.S. 1209 (1985), citing In re Kaslow, 707 F.2d
1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983).

In the present instance, the 35 U.S.C. § 112, first
paragraph, rejection resulted from an amendment during
prosecution to originally filed independent claim 1 which
added the following language:

... said first digital signal, said
second digital signal, and said third
digital signal are each independent of
each other.

The Examiner has taken the position (Answer, pages 4, 6, and
7) that the recited independent nature of the digital signals
supplied to the D/A converters is not supported by any

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description in the specification. In response, Appellant (Brief, pages 7-9) refers to the description at lines 1-11 of page 10 of the specification which describes the establishment of the output voltages of the D/A converters 4 and 5 between maximum and minimum values of the voltage sources in accordance with the digital input signals D_4 and D_5 . In Appellant's view, the separate nature of the digital inputs to the D/A converters 4 and 5, along with the ability to establish a range anywhere between maximum and minimum values of the voltage sources, supports the independence of the various digital inputs to the three claimed D/A converters.

Upon careful review of the claim language in question in light of Appellant's disclosure, we are in agreement with the Examiner's position as stated in the Answer. In our view, no support on the record exists for Appellant's conclusion that separate digital inputs to the D/A converters 4 and 5 would necessarily imply the independent nature of those inputs. In addition, the range setting ability of such digital inputs supports no conclusion of independence as well. We note that the Examiner, in further support of his position, refers to the equation at page 5 of the specification, also reproduced

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as part of dependent claim 4, which relates the output voltages of each of the claimed converters to the value of D_1 . In our opinion, this equation on its face supports the implication that the inputs of the claimed second and third D/A converters are dependent in some fashion on the value of D_1 . For all of the above reasons, the Examiner's 35 U.S.C. § 112, first paragraph rejection of independent claim 1 and claims 2-7 dependent thereon is sustained.

The rejection of claims 1-4 as anticipated by the Data Converter Reference Manual.

We note that anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Assoc, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

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With respect to independent claim 1, the Examiner (Answer, page 5) attempts to read the various limitations on the Data Converter Reference Manual making particular reference to Figure 16 on page 2-727. In response, Appellant (Brief, pages 10-14) asserts that, despite the reference's designation of various circuit elements as DAC1, DAC2, and DAC3, only one D/A converter is disclosed in Figure 16 of the Reference Manual. In any case, Appellant further contends that the digital inputs to the circuit elements DAC1, DAC2, DAC3 are not independent as recited in claim 1.

Initially, we do not agree with Appellant's contention that only a single D/A converter exists in the Reference Manual's Figure 16. While it may be true that the circuit of Figure 16, as a whole, performs a single D/A conversion operation, it is quite clear to us that multiple D/A converter circuit elements are involved in this operation. We do agree with Appellants, however, that the digital control inputs to each of the DAC1, DAC2, and DAC3 elements are not independent of each other as claimed. From the description of Figure 16 of the Reference Manual, it is apparent to us that the inputs to elements DAC1 and DAC2 are segmented portions of the input

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digital code partitioned into most significant and least significant bit portions, thereby establishing a dependent relationship among these input signals. Since the claimed independent nature of the digital input signals is not disclosed in the Data Converter Reference Manual, the Examiner's 35 U.S.C. § 102(b) rejection of claims 1-4 is not well founded and cannot be sustained.

The rejection of claims 1-4, 6, and 7
as anticipated by Okuyama.

In making this 35 U.S.C. § 102(b) rejection, the Examiner (Answer, page 5) has indicated how the claim limitations of independent claim 1 are read on the disclosure of Okuyama. In particular, the Examiner refers to Figure 1 of Okuyama and characterizes the voltage divider ladder and switch combination (26 and S11-S24) controlled by digital signals from registers R11 and R12 as corresponding to the claimed second and third D/A converters.

Appellant's representative at oral hearing, contrary to the position taken in the Brief, acquiesced to the Examiner's interpretation of Okuyama's digitally controlled ladder-switch combination as being a D/A converter, contending only that

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just a single converter is shown rather than the required two which would correspond to the recited second and third converters.

On careful review of the Okuyama reference in light of Appellant's arguments, we are in agreement with the Examiner's stated position in the Answer. The description, for example, at column 3, lines 37-40 of Okuyama indicates that separate switch groups, S11-S14 and S21-S24 are controlled by separate digital signals from registers R11 and R12. In our view, under the definition of a D/A converter agreed to by the Examiner and Appellant, this portion of Okuyama clearly describes two such D/A converters separately controlled by digital inputs and would correspond to the claimed second and third D/A converters. Accordingly, the Examiner's 35 U.S.C. § 102(b) rejection of independent claim 1, as well as dependent claims 2-4 not separately argued by Appellant, is sustained.

With respect to dependent claims 6 and 7, we note that the Examiner has grouped these claims together in the statement of the rejection, but has not addressed the claim limitations contained therein. Accordingly, on the record before us, we are constrained to agree with Appellant's

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arguments and, therefore, the 35 U.S.C. § 102(b) rejection of dependent claims 6 and 7 is not sustained.

The rejection of claims 6 and 7 as being unpatentable over the Data Converter Reference Manual in view of Connors.

From the Examiner's statement of the rejection (Answer, page 6), it is apparent that Connors was applied for the sole purpose of addressing the claimed separate output channels which the Examiner found lacking in the Data Converter Reference Manual. Connors, however, does not overcome the innate deficiencies of the Data Converter Reference Manual with respect to the recited independence of the digital inputs to the D/A converters and, therefore, we do not sustain the obviousness rejection of claims 6 and 7.

In summary, we have not sustained the 35 U.S.C. § 102(b) rejections of claims 1-4 based on the Data Converter Reference Manual nor of claims 6 and 7 based on Okuyama. We have also not sustained the obviousness reaction of claims 6 and 7 based on the Data Converter Reference Manual and Connors. We have

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sustained the 35 U.S.C. § 102(b) rejection of claims 1-4 based on Okuyama as well as the 35 U.S.C. § 112, first paragraph, rejection of claims 1-7. Accordingly, the decision of the Examiner rejecting claims 1-7 is affirmed.

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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)	BOARD OF PATENT
JOSEPH F. RUGGIERO)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
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