

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIROFUMI KITA, TOSHIYUKI KAITANI,
MASAHIRO KIMATA and YOSHITAKA OHNISHI

Appeal No. 1999-1937
Application No. 08/470,122

HEARD: June 13, 2001

Before KRASS, RUGGIERO, and BLANKENSHIP, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1, 2, 14 and 22-24.

The invention is directed to a motor operation controller which can accommodate different power supply voltages. An insulation structure is placed between the power supply and the motor to allow for bidirectional operation in a power mode and a regeneration mode.

Representative independent claim 1 is reproduced as follows:

1. A motor operation controller comprising:

a converter section having a rectifier for converting a first AC voltage of a power supply into a first DC voltage during a power mode,

an insulation type bidirectional DC voltage converter for converting said first DC voltage into a second DC voltage during the power mode, and

an inverter section for converting said second DC voltage into a second AC voltage and supplying said second AC voltage to a motor during the power mode.

The examiner relies on the following references:

Dishner	4,743,812	May 10, 1988
DeDoncker et al. (DeDoncker)	5,027,264	Jun. 25, 1991

Claims 1, 2, 14 and 22-24 stand rejected under 35 U.S.C. § 103 as unpatentable over DeDoncker and Dishner.

Reference is made to the briefs and answer for the respective positions of appellants and the examiner.

OPINION

The examiner alleges that Dishner discloses the use of a bidirectional “voltage converter in a conversion system involving several conversions involving AC/DC, DC/DC, DC/AC” and that DeDoncker discloses “an insulation type bidirectional DC/DC

voltage converter” [answer-page 4]. The examiner then concludes that it would have been obvious “to provide the insulation type bidirectional DC/DC voltage converter of DeDoncker with the bidirectional DC/DC voltage converter in a conversion system involving several conversions involving AC/DC to DC/DC to DC/AC of Dishner in order to provide a bidirectional DC/DC converter which outputs a DC output voltage with minimum ripple current and a bidirectional DC/DC converter which acts only as a boost converter when the power flow is from one permanent magnet machine to the other machine and which acts as a buck converter when the power flow is from the other machine to the one machine” [answer-pages 4-5].

For their part, appellants contend that the combination suggested by the examiner would not result in the claimed subject matter. Appellants complain that the examiner is inconsistent in the application of the references, using DeDoncker as the “primary reference” while later referring to Dishner as the “base reference” and DeDoncker as the “teaching reference.” Appellants further argue that the invention is not directed to an insulation type bidirectional DC/DC voltage converter but rather to the conversion of a first AC voltage to a second AC voltage, using a bidirectional DC/DC voltage converter as a component.

Appellants admit [supplemental brief-page 4] that DeDoncker relates to a DC/DC power converter which operates by converting a first DC voltage into an AC voltage which is transformed to a second AC voltage which in turn is converted to a DC output voltage. Appellants also admit that Dishner relates to a conversion device for converting a first AC voltage to a second AC voltage by converting the first AC voltage to a DC voltage which in turn is converted to a second DC voltage which is then converted to a second AC voltage" [supplemental brief-page 4]. Appellants conclude that because the object of DeDoncker is to convert a first DC voltage into a second DC voltage, and because the object of the instant invention is to convert a first AC voltage into a second AC voltage, "it would be impossible to modify DeDoncker...to produce the present invention" [supplemental brief-page 4].

After reviewing the applied references, it is our view that the examiner has not made out a prima facie case of obviousness with regard to the claimed subject matter.

First, with regard to appellants' confusion as to which reference is the "primary" reference and which is the "teaching" reference, we take the teachings of

each reference as a whole to determine whether any combination of these teachings would result in the instant claimed subject matter. We conclude that no combination of DeDoncker and Dishner would result in the instant claimed subject matter.

Figure 1 of Dishner shows a conversion from a first AC voltage to a second DC voltage by converting the first AC voltage to a DC voltage which in turn is converted to a second DC voltage. The DC/DC converter 52 is bidirectional in nature.

Appellants have admitted that Dishner does, indeed, convert a first AC voltage to a second AC voltage by converting the first AC voltage to a DC voltage which in turn is converted to a second DC voltage which is then converted to a second AC voltage [supplemental brief-page 4]. If the DC/DC conversion apparatus, element 52, had been a generally identified converter, it would appear that artisans would have looked to the prior art to determine what could be used for such a DC/DC converter. DeDoncker discloses a DC/DC converter. The examiner identifies the DC/DC converter of DeDoncker as "an insulation type bidirectional DC voltage converter," as claimed and appellants do not deny this. Accordingly, it would have appeared reasonable to us that the skilled artisan would have been led to use a typical DC/DC

converter, as disclosed by

DeDoncker, for a generally identified DC/DC converter in Dishner. However, this is not the case because Dishner is very specific in identifying the DC/DC converter 52 as the circuit shown in Dishner's Figure 3 and also discloses a very specific function for that circuit.

More specifically, Dishner discloses that if the prime mover speed range is constrained, as described in column 5, lines 5-31 of Dishner, then DC/DC converter 52 may be replaced by a DC/DC converter 70 as seen in Fig. 3. Thus, Dishner is directed to a specific configuration of the DC/DC converter, viz., that circuit shown in Figure 3 of the patent. While Dishner discloses that converter 52 of Figure 1 *may* be replaced by converter 70 of Figure 3, this does not mean that *any* DC/DC converter, e.g., that of DeDoncker, may act as a replacement for Dishner's converter 52. The specific function sought by Dishner for the DC/DC converter is that the converter acts only as a boost converter when the power flow is from one permanent magnet machine to the other machine and acts as a buck converter when the power flow is

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from the other machine to the one machine. There is no evidence that the DC/DC converter disclosed by DeDoncker would be an equivalent structure to Dishner's DC/DC

converter in performing this function. Accordingly, the examiner has provided insufficient evidence as to why the skilled artisan would have been led to substitute DeDoncker's DC/DC converter for the DC/DC converter of Dishner. Thus, the examiner's reasoning falls short of a prima facie showing of obviousness of the instant claimed subject matter.

The examiner's decision rejecting claims 1, 2, 14, 22, 23 and 24 under 35 U.S.C. § 103 is reversed.

REVERSED

ERROL A. KRASS)
Administrative Patent Judge)
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JOSEPH F. RUGGIERO
Administrative Patent Judge

HOWARD B. BLANKENSHIP
Administrative Patent Judge

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