Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ANIL R. DUGGAL and LIONEL M. LEVINSON

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Appeal No. 2000-2037
Application No. 08/810,055

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ON BRIEF

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Before LALL, GROSS, and BLANKENSHIP, Administrative Patent Judges.

LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 3, 5, 6, 11, 13, 14 and 17-20, all the pending claims in the application.

According to appellants (brief at pages 2-6), the disclosed invention relates to a current limiting arrangement for general

circuit protection including electrical distribution and motor control applications. In particular, the invention relates to a current limiting arrangement that is capable of limiting the current in a circuit when a high current condition occurs. Numerous devices are available for limiting the current in a circuit when a high current condition occurs. One known limiting device includes a filled polymer material, which exhibits what is commonly referred to as a PTCR (positive-temperature coefficient of resistance) or PTC effect. An attribute of the PTCR or PTC effect is that at a certain switch temperature the PTCR material undergoes a transformation from a basically conductive material to a basically resistive material. In some of these PTCR current limiting devices, the PTCR material is placed between pressure contact electrodes. See Figure 1 of the disclosure. The following claim is a further illustration of the invention.

17. A current limiting arrangement having operational bounds, the current limiting arrangement comprising:

a first electrode set comprising first and second electrodes and a first electrically conductive composite material between the first and second electrodes;

a second electrode set comprising third and fourth electrodes and a second electrically conductive composite material between the third and fourth electrodes,

the first electrically conductive composite material and the second electrically conductive material each comprising a low

pyrolysis temperature binder and an electrically conductive filler,

the first electrically conductive composite material and the second electrically conductive material being electronically in parallel with one another,

the first electrically conductive composite material being in physical and electrical contact with the first and second electrodes at first electrode set interfaces disposed between the first electrically conductive composite material and the first and second electrodes, and the second electrically conductive material being in physical and electrical contact with third and fourth electrodes at second first electrode set interfaces disposed between the second electrically conductive composite material and the third and fourth electrodes, the first electrically conductive composite material and the second electrically conductive composite material are spaced from each other, and the first electrode set and the second electrode set are spaced from each other with the first electrically conductive composite material and the second electrically conductive composite material;

first compressive pressure applying means for exerting pressure on the first electrode set;

second compressive pressure applying means for exerting pressure on the second electrode set, the first compressive pressure applying means being separate and distinct from the second compressive pressure applying means;

the first electrically conductive composite material possessing first electrical conductive characteristics that define operational bounds for the first electrically conductive composite material and the second electrically conductive composite material possessing second electrical conductive characteristics that define operational bounds for the second electrically conductive composite material,

where at least one of the first electrical conductive characteristics of the first electrically conductive composite material differs from at least one of the second electrical conductive characteristics of the second electrically conductive composite material, and a total of the first and second

electrical conductive characteristics define combined operational bounds that equal the operational bounds of the current limiting arrangement.

The examiner relies on the following references:

Moorhead et al. (Moorhead)	3,878,501	Apr. 15, 1975
Grosse-Wilde et al. (Grosse-Wilde)	5,644,283 (effective filing date	Jul. 1, 1997 Feb. 14, 1995)
Karlstrom (EP)	WO 94/10734	May 11, 1994

Claims 3, 11, and 17-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grosse-Wilde in view of Moorhead.

Claims 3, 5, 6, 11, 13, 14 and 17-20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Grosse-Wilde in view of Karlstrom.

Rather than repeat the arguments of appellants and the examiner, we make reference to the brief (Paper No. 21), the reply brief (Paper No. 23) and the examiner's answer (Paper No. 22) 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 briefs.

We reverse.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness (see ***In re Rijckaert***, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993); ***In re Oetiker***, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992)), which is established when the teachings of the prior art itself would appear to have suggested the claimed subject matter to one of ordinary skill in the art (see ***In re Bell***, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993)).

After review of the examiner's rejection and the examiner's response to the appellants' arguments (final rejection, Paper No. 17, pages 2 and 3, and the examiner's answer, Paper No. 22, pages 3-6) and appellants' arguments (brief, pages 8-15, and reply brief at page 3), we are of the view that the examiner has not made out a prima facie case in rejecting the claims on appeal under either of the combinations suggested by the examiner.

Grosse-Wilde and Moorhead

Even if we give the examiner the benefit of the proper combination of Grosse-Wilde and Moorhead, we do not find that the combination meets the limitation of "first compressive pressure applying means for exerting pressure on the first electrode set" and "second compressive pressure applying means for exerting

pressure on the second electrode set, the first compressive pressure applying means being separate and distinct from the second compressive pressure applying means." That would still hold true even if we were to go along with the examiner's position that the composite resistive materials in Figure 6 of Grosse-Wilde may be considered as physically spaced apart and parallel to each other. The addition of the Moorhead patent (particularly considering Figure 4 relied upon by the examiner) does not help meet the recited limitation noted above. Since the other independent claim (18) and all the dependent claims each contain the above limitation, we do not sustain the rejection of claims 3, 11, and 17-20 over Grosse-Wilde and Moorhead.

Grosse-Wilde and Karlstrom

The examiner rejects claims 3, 5, 6, 11, 13, 14, and 17-20 under this combination. Again, after reviewing the examiner's rejection and the examiner's response to the appellants' arguments, we are of the opinion that the examiner has not carried his initial burden of making out a prima facie case to reject these claims. We agree with the examiner (final rejection at page 3) that Figure 9 of Karlstrom does show two composite bodies 10a and 10b which are in parallel and physically spaced apart, despite the protestation of appellants. The examiner at

pages 4 and 5 of the examiner's answer further offers an argument why it would have been obvious to space in parallel a first and second resistive material with a first and second pressure applying means which would automatically result in two distinct pressure exerting means. However, we, like appellants, do not find any factual evidence in forming the combination of Grosse-Wilde and Karlstrom which would lead an artisan to come up with the arrangement recited in the claims without the benefit of implying the roadmap of the appellants' invention. Therefore, we do not agree with the examiner's position that it would have been obvious to add two separate and distinct means of compressive pressure applying means to the sets of electrodes as recited in the claims.

Regarding the arguments of the combining of the references, the Federal Circuit states that "[the] mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." **In re Fritch**, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992) (citing **In re Gordon**, 773 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the

inventor." **Para-Ordinance Mfg. v. SGS Importers Int'l**, 73 F.3d at 1087, 37 USPQ2d at 1239 (Fed. Cir. 1995) (citing **W.L. Gore & Assocs. v. Garlock, Inc.**, 721 F.2d 1551, 1553, 220 USPQ 311, 312-13 (Fed. Cir. 1983)).

Here, the examiner asserts (answer at page 5) that "[a]nd, it is of course, notoriously well known as a matter of first year electrical engineering that any two resistors, equal or different, can be placed in parallel for the purpose of lowering the total resistance . . . ." We are not convinced by the examiner's argument. Whereas we agree with the examiner that putting two resistors in parallel lowers the resistance, there is nothing in the record which would suggest that there is a need or motivation to combine the two resistors in parallel to have a lower resistance, nor that it is the only reason for the specific structure recited in the claims. Consequently, we are of the view that the examiner has not given a proper justification for combining the references.

In conclusion, we have not sustained under 35 U.S.C. 103 the rejection of claims 3, 11, 17-20 over Grosse-Wilde and Moorhead, nor of claims 3, 5, 6, 11, 13, 14, and 17-20 over Grosse-Wilde and Karlstrom.

The decision of the examiner is reversed.

REVERSED

Parshotam S. Lall Administrative Patent Judge	)	
Anita Pellman Gross Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Howard B. Blankenship Administrative Patent Judge	)	

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