

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* NOBORU FURUKAWA, MASAHIKO KAWASE,  
and YASUNORI ITO

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Appeal 2006-1786  
Application 10/322,859  
Technology Center 2800

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Decided: September 28, 2006

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Before KIMLIN, GARRIS, and WARREN, *Administrative Patent Judges*.  
GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal which involves claims 1-8.

We AFFIRM.

The subject matter on appeal relates to a thermistor chip. With reference to Appellants' drawing, the thermistor chip 11 comprises an NTC thermistor element 12, outer electrodes 14 and diffused layers 13 formed entirely over the main surfaces of element 12, the diffused layers 13 being formed proximately to all external exposed surfaces of the thermistor element and being free of any

insulating layer inclusive of any part of the diffused layers thereupon. This appealed subject matter is adequately represented by independent claim 1 which reads as follows:

1. A thermistor chip comprising:
  - an NTC thermistor element having end surfaces opposite each other and mutually oppositely facing main surfaces extending between said end surfaces;
  - outer electrodes on said end surfaces and end portions of said main surfaces; and
  - diffused layers formed entirely over said main surfaces including said end portions by subjecting an inorganic material and said thermistor element together to a firing process at 1000-1300°C, said end surfaces being not covered by said diffused layers, said inorganic material having a higher specific resistance than material of said thermistor element, said diffused layers being formed proximally to all externally exposed surfaces of said thermistor element and being free of any insulating layer inclusive of any part of said diffused layers thereupon.

The references set forth below are relied upon by the Examiner as evidence of obviousness:

Oguro <sup>1</sup>	JP 63-316403	Dec. 23, 1988
Furukawa <sup>1</sup>	JP 03-250603	Dec. 28, 1989

Claims 1-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Furukawa in view of Oguro, and claims 1-5, 7 and 8 are correspondingly rejected as being unpatentable over Oguro in view of Furukawa.

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<sup>1</sup>Our understanding of these references is based on the English translations thereof which are in the record of this application.

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Rather than reiterate the respective positions advocated by the Appellants and by the Examiner concerning the above noted rejections, we refer to the Brief and to the Answer for a complete exposition thereof.

The Appellants have not separately argued any of the appealed claims in the manner required by our regulation 37 C.F.R. § 41.35(c)(1)(vii)(2004). As a consequence, we select independent claim 1 as representative of the rejected claims, and all rejected claims will stand or fall in accordance with this representative claim.

#### OPINION

For the reasons set forth in the Answer and below, we will sustain each of the rejections before us on this appeal.

Concerning the rejection based on Furukawa in view of Oguro, the Examiner acknowledges that the externally exposed main surfaces of Furukawa's thermistor element are covered by a glass layer rather than a diffused layer as required by all appealed claims including representative independent claim 1. According to the Examiner, it would have been obvious for one with ordinary skill in this art to replace Furukawa's glass layer with a diffused layer "in order to form a reliable thermistor" (Answer 4) as taught by Oguro.

In response to the Examiner's obviousness conclusion, the Appellants argue that "there is no advantage to be gained by so modifying Furukawa's thermistor" (Br. 5).

The Appellants' argument is not well taken. In the paragraph bridging pages 4 and 5 and in the paragraph bridging pages 7 and 8 of the Answer, the Examiner has provided a detailed exposition of why an artisan would have been motivated to

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combine the applied references in the manner proposed, namely, in order to provide the Furukawa thermistor with the advantages taught by Oguro to attend use of a diffused layer. This exposition by the Examiner is reasonable and supported by the applied references. Moreover, this exposition has not been rebutted by the Appellants with any meaningfully specific technical or legal reasoning.

In light of the foregoing, it is our determination that the Examiner has established a prima facie case of obviousness for the rejection based on Furukawa in view of Oguro which the Appellants have failed to successfully rebut with argument or evidence of nonobviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). We hereby sustain, therefore, the Section 103 rejection of claims 1-8 as being unpatentable over Furukawa in view of Oguro.

As for the rejection based on Oguro in view of Furukawa, the Examiner states that “Oguro discloses the claimed invention except the end surfaces not covered by the diffused layers” (Answer 5) and concludes that “it would have been obvious in order to improve reliability, variation of resistance, adhesiveness, and solderability, to form the Oguro device having the end surfaces free of glass layers or diffused layers, especially where Furukawa discloses a concern for reliability and stability and discloses a similar thermistor device” (Answer 6).

In rebuttal, the Appellants argue that, “[a]lthough Furukawa shows end surfaces that are not covered by the glass layer 4, this does not mean that it was obvious for Oguro to modify its invention so as to remove its diffused layer from the end surfaces in order to make it look like Furukawa’s” (Br. 5).

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We are again unpersuaded by the Appellants' argument. As fully explained in the Answer (e.g., see pp. 5-6 and 8-9), an artisan would have been motivated to form the thermistor of Oguro with end surfaces free of diffused layers in order to obtain a number of technical advantages. The Appellants have not explained why the advantages expressly enumerated by the Examiner would not have motivated an artisan to modify the Oguro thermistor in the manner under consideration. Under these circumstances, we are constrained to regard the Appellants' position as being without perceptible merit.

Therefore, we again determine that the Examiner has established a prima facie case of obviousness which the Appellants have failed to successfully rebut with argument or evidence to the contrary. *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. It follows that we also hereby sustain the Section 103 rejection of claims 1-5, 7 and 8 as being unpatentable over Oguro in view of Furukawa.

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The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(2004).

AFFIRMED

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