

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. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD B. SALMONSON

Appeal No. 1999-1052
Application No. 08/604,841

ON BRIEF

Before CALVERT, ABRAMS and FRANKFORT, Administrative Patent Judges.
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-4 and 6-15, which were amended after the final rejection. Claim 5 has been allowed.

We REVERSE.

BACKGROUND

The appellant's invention relates to an apparatus for dissipating heat generated by electronic computer components mounted on a printed circuit board assembly. An understanding of the invention can be derived from a reading of exemplary claim 1, which appears in the appendix to the appellant's Brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Butt	3,327,776	Jun. 27, 1967
Crowe	4,941,530	Jul. 17, 1990
Frankeny <u>et al.</u> (Frankeny)	5,006,924	Apr. 9, 1991

Claims 1-4, 9, 11 and 12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Frankeny.

Claims 6-8, 13 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Frankeny in view of Butt.

Claims 10 and 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over Frankeny in view of Crowe.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the Answer (Paper No. 14) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No.12) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, the applied prior art references, the respective positions articulated by the appellant and the examiner, and the guidance provided by our reviewing court. As a consequence of our review, we make the determinations which follow.

The Rejection Under 35 U.S.C. § 102(b)

Independent claims 1 and 12 and dependent claims 2-4, 9 and 11 stand rejected as being anticipated by Frankeny. It is axiomatic that anticipation is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of the claimed invention. See, for example, In re Paulsen, 30 F.3d 1475, 1480-1481, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994) and In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

The appellant's invention is directed to a cold plate the purpose of which is to replace both the liquid cooled and the air cooled systems that are separately utilized in computers in the prior art. According to the appellant, his invention decreases the number of parts and parts variations that manufacturers must maintain, and reduces manufacturing and assembly complexity and part costs. As manifested in independent claim 1, the invention comprises a mounting plate for carrying thereon a printed circuit board assembly,

a cover generally parallel to and spaced from the mounting plate, and a cooling chamber defined by the space between the cover and the mounting plate. The cooling assembly comprises a liquid cooled section disposed within the cooling chamber through which coolant can flow for carrying away heat generated by the printed circuit board assembly, and an air cooled section disposed within the cooling chamber and positioned between the cover and the liquid cooling section through which air can flow for carrying away heat generated by the printed circuit board assembly. The claim additionally requires that the mounting plate include a cooling surface facing into the cooling chamber and a board mounting surface adapted to receive the printed circuit board assembly.

It is the examiner's view that Frankeny discloses all of the subject matter recited in claim 1, considering that "[i]nherently" the entire Frankeny assembly is disposed within a casing. We do not agree with this conclusion.

Frankeny is directed to a heat sink system for carrying away the heat generated by printed circuit devices by means of liquid and air cooling. However, this is where the similarity with the system recited in claim 1 ends. Using the language of claim 1 as a guide, Frankeny fails to disclose or teach that the cold plate includes a mounting plate having a board mounting surface adapted to receive a printed circuit board assembly thereon. In the reference the circuit component is mounted on a separate plate that does not form part of the cooling system. In this regard, we point out that the patent states that

the cooling assembly comprises a flexible membrane which is “urged into slidable mating contact with the upper surface” of the circuit board so that any thermal mismatch will be accommodated by sliding contact therebetween (column 3, line 58 et seq.), which clearly precludes there being a “board mounting surface” as part of the cooling system. Nor does Frankeny disclose a cover, much less a cover that is generally parallel to and spaced from the mounting plate to define with the mounting plate a cooling chamber. The fact that a cover may “inherently” exist somewhere in the electronic apparatus does not meet the requirements of the claim, especially when considered in the light of the appellant’s specification.

It is our conclusion that each and every element of claim 1 is not disclosed, expressly or inherently, in Frankeny, and we therefore will not sustain the Section 102 rejection of independent claim 1 or, it follows, of claims 2-4, 9 and 11, which depend from claim 1. For the same reasons, Frankeny fails to anticipate the subject matter of independent claim 12, and that rejection also is not sustained.

The Rejections Under 35 U.S.C. § 103

The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary

skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

Claims 6-8, 13 and 14 stand rejected as being unpatentable over Frankeny in view of Butt, the latter being cited for its teaching of a plurality of internal fin assemblies for uniformly distributing the coolant flow in a fluid cooled heat exchanger for cooling electronic components. Be that as it may, and considering Frankeny in the light of Section 103, Butt fails to alleviate the shortcomings in Frankeny that were pointed out above with regard to the rejection of claim 1 et al. under Section 102. Thus, the combined teachings of Frankeny and Butt fail to establish a prima facie case of obviousness with regard to the subject matter of claims 6-8, 13 and 14, all of which depend from claim 1, and we will not sustain this rejection.

We reach the same conclusion, for the same reasons, with regard to the rejection of dependent claims 10 and 15 as being unpatentable over the combined teachings of Frankeny and Crowe.

SUMMARY

None of the rejections are sustained.

The decision of the examiner is REVERSED.

REVERSED

IAN A. CALVERT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
NEAL E. ABRAMS)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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CHARLES E. FRANKFORT)	
Administrative Patent Judge)	

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APPEAL NO. 1999-1052 - JUDGE ABRAMS
APPLICATION NO. 08/604,841

APJ ABRAMS

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DECISION: **REVERSED**

Prepared By:

DRAFT TYPED: 08 Jan 02

FINAL TYPED: