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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ROBERT SINGLETON and LAWRENCE J. KEIM

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Appeal 2011-001579  
Application 11/455,936  
Technology Center 2800

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Before ROBERT E. NAPPI, HUNG H. BUI, and LYNNE E. PETTIGREW,  
*Administrative Patent Judges.*

*Per Curiam*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the rejection of claims 21 through 37.

We affirm.

### INVENTION

The invention is directed to an electronic device, which includes a circuit board with circuit elements where the board and elements are contained in a core layer. See pages 5, 6 and figure 4 of Appellants' Specification. Claim 21 is representative of the invention and reproduced below:

21. An embedded electronic device comprising:
- a printed circuit board, having a top surface and a bottom surface;
  - a plurality of circuit components attached to the top surface of the printed circuit board;
  - a bottom overlay directly and uniformly attached to the bottom surface of the printed circuit board over their entire common surfaces;
  - a top overlay positioned above the top surface of the printed circuit board; and
  - a core layer comprised of thermosetting polymeric material positioned between the top surface of the printed circuit board and the top overlay.

### REFERENCES

Clifton	US 5,480,842	Jan. 2, 1996
Tiffany, III	US 5,955,021	Sep. 21, 1999
Babb	US 6,262,692 B1	Jul. 17, 2001
Ohta	US 2003/0062420 A1	Apr. 3, 2003
Flynn	EP 0488574 A2	Jun. 3, 1992
Tempelton	WO 02/076717 A2	Oct. 3, 2002

### REJECTIONS AT ISSUE

The Examiner has rejected claims 21, 22, 24, 25, 27, 33, and 35 through 37 under 35 U.S.C. § 103(a) as unpatentable over Clifton and Tiffany. Answer 4-6.<sup>1</sup>

The Examiner has rejected claim 26 under 35 U.S.C. § 103(a) as unpatentable over Clifton, Tiffany, and Flynn. Answer 6.

The Examiner has rejected claim 23 under 35 U.S.C. § 103(a) as unpatentable over Clifton, Tiffany, and Babb. Answer 6-7.

The Examiner has rejected claims 28 and 34 under 35 U.S.C. § 103(a) as unpatentable over Clifton, Tiffany, and Ohta. Answer 7.

The Examiner has rejected claim 29 through 32 under 35 U.S.C. § 103(a) as unpatentable over Clifton, Tiffany, and Tempelton. Answer 7-8.

### ISSUE

Appellants argue on pages 8 through 14 of the Appeal Brief that the Examiner's rejections under 35 U.S.C. § 103(a) based upon Clifton and Tiffany are in error.<sup>2</sup> These arguments present us with the issues:

- a) Did the Examiner err by not considering the references to teach away from being combined?
- b) Did the Examiner err in combining the references as Tiffany includes the same deficiencies as the Reed reference cited in a previous office action?

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<sup>1</sup> Throughout this opinion we refer to the Examiner's Answer mailed on June 9, 2010.

<sup>2</sup> Throughout this opinion we refer to Appellants' Appeal Brief February 26, 2010, and Reply Brief dated August 9, 2010.

## ANALYSIS

We have reviewed Appellants' arguments in the Briefs, the Examiner's rejection and the Examiner's response to the Appellants' arguments. We disagree with Appellants' conclusions with respect to each of the issues raised.

In response to the first issue, the Examiner has responded providing a well-reasoned rationale addressing each of the points raised by the Appellants. Answer 8-13. We concur with Examiner's response to each of the rationales proffered by Appellants as to why Clifton and Tiffany teaches away from the combination. As identified by the Examiner, many of the proffered reasons are not commensurate in scope with the claim, nor do we find that they would discourage the skilled artisan from combining the teachings.

In addition, we note that both Appellants' figure 4 and Clifton's figure 4 show the printed circuit board and circuit components in the middle of the card. Thus, Appellants' arguments concerning Clifton discouraging a card structure with circuit components near the edge as allegedly claimed, is not commensurate with either the claim or Appellants Specification. Brief 10-11; Reply Brief 2-3.

Further, Appellants' arguments directed to the declaration submitted on March 30, 2009 as also being applicable to methods such as used by Tiffany are not persuasive. Brief 13; Reply Brief 6-7. The declaration is of little value as the statements in the declaration are not commensurate with claim 21 and are directed to the teachings of a different reference, Reed. Appellants' attempt to show the declaration is relevant on page 6 of the Reply Brief; however, we are not persuaded that the statements and tests are

directly applicable to Tiffany. Further, we are not persuaded by Appellants' arguments, on page 12 of the Reply Brief which assert, based on the declaration, that the skilled artisan would be discouraged from using the Reed reference as it can create air pockets. This line of reasoning does not address or seem to consider the teaching of Tiffany discussing solving the problem of air bubbles (see e.g. Tiffany, col. 12, ll. 55-67).

Finally, we note the Examiner found that Clifton teaches all of the limitations of representative claim 21, except for a core layer of thermal-setting material and relies upon Tiffany to teach such a layer. Answer 4. Figure 4 of Clifton also discusses layer 410, which is between the circuit board and the top overlay, and as such, meets the core layer of representative claim 21. However, Clifton discloses this layer as a structural polyester layer (and does not identify how this structural polyester layer is made, i.e., whether or not it is a thermosetting polymeric material as claimed). However, Tiffany identifies that there are polyester materials that are thermosetting polymeric materials (see e.g. col 6, ll. 36-39).

For all of the above reasons, Appellants' arguments directed to the first issue have not persuaded us of error in the Examiner's rejection of representative claim 21.

With respect to the second issue, the Examiner has responded that "Reed is not part of the Final Rejection and specific arguments to Reed are moot." Answer 8. We concur further in as much as Appellants' arguments directed to the second issue in asserting that the March 30 2009 declaration, applies to the rejection based upon Tiffany are not persuasive. As discussed above we find the statements in the declaration to be of little value to the current rejection. Accordingly, Appellants' arguments directed to the

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second issue have not persuaded us of error in the rejection of representative claim 21.

Appellants have not presented arguments directed to the other claims rejected under 35 U.S.C. § 103(a). As such, we sustain the Examiner's various rejections under 35 U.S.C. § 103(a) of claims 21 through 37.

### DECISION

The decision of the Examiner to reject claims 21 through 37 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).

AFFIRMED

ELD