**DOCKET NO. BASAVANHALLY 38-2-11** **PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| In re Application of: | Nagesh R. Basavanhally, *et al.* |
| Serial No.: | 11/444,860 |
| Filed: | May 31, 2006 |
| For: | PACKAGES WITH BURIED ELECTRICAL LFEEDTHROUGHS |
| Group No.: | 2841 |
| Examiner: | Xiaoliang Chen |
| Confirmation No: | 7544 |

Mail Stop Appeal Brief-Patents

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Sir:

**APPELLANTS' REPLY BRIEF UNDER 37 C.F.R. §41.41**

In response to the Examiner's Answer mailed June 3, 2009, the Appellants submit this Reply Brief under 37 C.F.R. §41.41.

## I. Reply to Examiner's Arguments

1) In response to the Appellants' argument that Dove in view of Yasumura is not a proper combination because Dove teaches away from the Yasumura's channel, the Examiner argues:

> The statement of Dove (C.2, L.13-22) cited by applicant, of which, Dove is used in the background of the invention, and which is unrelated to the modification at all. The Figures used in the argument are not used in the rejection and are not related to the rejection. (Examiner's Answer, Page 17, section (A).

In response, the Appellants respectfully maintain that it is irrelevant whether or not the teachings by Dove are part of Dove's Background section or were used in the Examiner's rejection. The whole of Dove's disclosure reflects the understanding of one of ordinary skill in the art and therefore the whole of Dove's disclosure must be considered. The Examiner can't selectively pick and choose between the various teachings of Dove, ignoring those inconvenient to his arguments. As already explained in the Appeal Brief, Dove teaches the importance of avoiding electrical interference through the use of an integrally shield circuit, and, that inadvertent gaps or spaces can provide openings through which electromagnetic signals undesirably can radiate. In view of these teachings by Dove, one of ordinary skill would not have been motivated to introduce a plurality of Yasumura's channels into Dove's apparatus, as proposed in the Office Action, because this would introduce multiple routes through which undesirable electromagnetic signals could radiate into or out of Dove's apparatus.

2) In response to the Appellants' argument that Dove in view of Yasumura is not a proper combination because there is no reasonable expectation of success of introducing Yasumura's electrical interconnections into Dove's apparatus, the Examiner argues:

> Dove disclose the conductive lead, (Dove's lead is on the surface of the board), Yasumura teaches a feedthrough structure, a channel with a conductive lead, (cut out

> a channel in the board and place the conductive lead in the channel), therefore using Yasumara's feedthrough stucture in Dove's device is performable and reasonable. (Examiner's Answer, Page 17, section (B).

In response, the Appellants respectfully maintain that Yasumara teaches the use of contact wipes which requires the movement of one conductive element against another conductive element to form the contact wipe (see e.g., Illustration 4 in the Appeal Brief), and, there is no evidence provided by the Office Action or Answer that Dove's device could accommodate such wiping motions.

For instance, there is still no explanation of how Yasumura's curved paralleled conductive elements could be reasonably moved to form a contact wipe, in the Examiner's proposed modification to form a channel or gap in Dove's apparatus. For instance, merely cutting out a channel in the board and placing a conductive lead in the channel, as speculated by the Examiner, does not inherently achieve the contact wipe required by Yasumara. For instance, there is no evidence presented to show that Dove's components are designed to accommodate Yasumara's required wiping motions. Rather, Dove's heat sink 115 is attached to the integrated circuit 110 through a hole 140 in the substrate 135 and also directly attached to a side 136 of the substrate 135 (Dove, FIG. 1, illustration 3 herein; C.3, L. , 37-50). Moreover, the conductive layers 145 and dielectric layers 150 are depicted as attached to the substrate 135 and the conductive layers 145 are bonded via wires 155 to the electronic component 110. Given these inter-attached and bonded structures, it is not apparent how pairs of Yasumura's conductive elements could be arranged in channels and so that wiping motions to achieve Yasumura's electrical connections. The Office Action or Answer has not explained how it would be obvious to achieve electrical connections using wiping motions for this combination of references.

3) In response to the Appellants' argument that Dove in view of Yasumura is not a proper combination because there is no articulated reasoning with rational underpinnings to support the combination of Dove in view of Yasumura, the Examiner argues:

> As in the final rejection, examiner clearly stated the motivation to combine the reference of Dove and Yasumara: in order to reduce the size and increase the stability and integrity of structure of the device, and a person having ordinary skill in the art would recognize the motivation easily, since the modification integrating the conductors into the channels of the substrate instead of the conductors laying on the structure of the substrate is well known in the electronic housing art. (Examiner's Answer, Page 17, section (C).

The Appellants agree that the Examiner clearly stated the rejection. However, neither the Office Action nor Answer articulate reasoning with rational underpinnings to support a motivation for the asserted combination. Again, as pointed out in the Appeal Brief, no portions of Dove or Yasumara have been cited to support the assertion that Yasumura's modifications would actually reduce the size or increase structural integrity of Dove's device, as compared to the devices already disclosed in Dove. For instance, it seems that Dove's device would have to be modified, somehow, to accommodate the wiping motions required by Yasumara to achieve a contact wipe. It does not seem that such a modification would this actually reduce the size of Dove's device. For instance, it seems that Dove's device would have to be modified, by cutting out channels in the board as speculated by the Examiner, to accommodate Yasumura's curved paralleled conductive elements. It does not seem that such a modification would this actually increase structural integrity of Dove's device. For these reasons, the Office Action or Answer has not articulated reasoning with rational underpinnings to support this asserted combination of references.

4) In response to the Appellants' argument that Dove does not teach or suggest a hermetically sealed cavity, such as in the apparatus recited in Claim 4, the Examiner's argues:

> a) Again, as pointed out above, applicant using the background of the invention of Dove, which is not related and was not used in the rejection at all.
> b) Dove clearly disclose wherein the joint housing, and substrate hermetically seal the cavity (the metal cover is sealed to the cavity [col. 1, line 43], and shows in figure 1. (Examiner's Answer, Page 18)

In response to point (a), the Appellants again respectfully maintain that it is irrelevant whether or not the teachings by Dove are part of Dove's Background section or were used in the Examiner's rejection. The whole of Dove's disclosure must be considered. The Examiner cannot selectively pick and choose between the various teachings of Dove ignoring those inconvenient to his arguments.

In response to point (b), the Appellants respectfully disagree that Dove clearly discloses a hermetic seal. For instance, the sentence relied upon by the Examiner (C.1, L.43) states:

> One problem attendant with the more traditional method of constructing microwave circuits is that the method of sealing the metal cover to the cavity uses conductive epoxy. (Dove, Col. 1, Lines 40-43)

The Appellants submit that this sentence from Dove does not teach or suggest a hermetically sealed cavity as recited in the pending claim. In partiuclar, disclosing that a metal cover is sealed to a cavity with epoxy does not teach or suggest that the cavity is hermetically sealed, or at least, the Examiner has not shown why such a seal inherently hermetic. If the Examiner is stating that such a seal is hermetic, Applicants request that the Examiner provide evidence for such a conclusion. Additionally, the Appellants submit that there is nothing in Figure 1 of Dove (shown in Illustration 3 of the Appeal Brief) that teaches or suggests a hermetic seal, or at least the Examiner has not shown how this is inherently taught by the figure.

The Appellants also wish to note for the record that the above relied-upon portion of Dove (C.1, L.43) is from the background section of Dove, the very same background section which the Examiner in point (a) and section (1) above asserted, "is not related and was not used in the rejection

at all." It seems, therefore, that the Examiner wishes to use Dove's background when it supports the Examiner's rejection, but ignore Dove's background when it teaches away from the asserted combination of art being made by the Examiner.

5) In response to the Appellants' argument that there is no motive the combine the teaching of Tatum with Dove, Yasumura, Jacob, and Steddom, to suggest the apparatus recited in Claim 5, the Examiner argues:

> a) The teaching of Tatum does not related to any modification of the device of Dove by Yasumura, Jacob, and Steddom.
> b) The motivation is clearly stated in the final rejection that it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the optical device and a window as taught by Tatum et al. in the housing of the electrical device of Dove et al., in order to be able to couple the device to the faster optical communications applications (Tatum et al. paragraph [0002]).

In response, the Applicants maintain that neither the Office Action nor Answer provide reasoning with rational underpinning to explain why one of ordinary skill in the art would replace, or add to Dove's integrated circuit, an array of Tatum's vertical cavity surface emitting lasers. As explained in the Appeal Brief, Dove's device is directed to microwave circuits (e.g., integrated thick film RF and microwave microcircuits). The Office Action provides no reason why one would either replace Dove's microwave integrated circuit located inside of the conductive lid with an array of Tatum's vertical cavity surface emitting lasers or add an array of lasers to Dove's microwave circuit. For instance, neither the Office Action nor Answer provide evidence and reasoning to show that such a replacement actually results in, or has a likelihood of, producing faster optical communications applications in Dove's modified device.

## II. Conclusion

For the at least the reasons set forth above and in the appeal brief filed March 6, 2009, the claims on appeal are patentably non-obvious over the references as applied in the final rejection and Examiner's Answer. Accordingly, the Appellant respectfully requests that the Board of Patent Appeals and Interferences reverse the Examiner's Final Rejection of all of the Appellant's pending claims.

Respectfully submitted,

HITT GAINES, P.C.

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Dated: August 3, 2009