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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TOBY JAMES MORRIS and MARC HARPER

Appeal 2018-008030
Application 15/001,093
Technology Center 2600

Before MAHSHID D. SAADAT, ALLEN R. MacDONALD, and NABEEL U. KHAN, *Administrative Patent Judges.*

MacDONALD, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 15, 21, and 23–27. Claims 4, 7, 8, 12–14, 16, 17, and 22 have been cancelled, and claims 1–3, 5, 6, 9–11, and 18–20 have been withdrawn from consideration. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Microsoft Technology Licensing, LLC. Appeal Br. 2.

CLAIMED SUBJECT MATTER

Claim 15 is illustrative of the claimed subject matter (emphasis, formatting, and bracketed material added):

> 15. A method of manufacturing a wireless communications device comprising:
>
> [A.] connecting a first housing to a first network communications assembly, the first network communications assembly configured to communicatively connect to a wireless network external to the wireless communications device according to a first network protocol and including a first modem and at least one antenna, the first housing including a first thermal distribution plate for dissipating heat produced by at least the first modem of the first housing;
>
> [B.] connecting a second housing to a second network communications assembly, the second network communications assembly configured to communicatively connect to another network external to the wireless communications device according to a second network protocol, the second network protocol being different from the first network protocol, the second network communications assembly including a second modem and at least one other antenna, the second housing including a second thermal distribution plate for dissipating heat produced by at least the second modem of the second housing; and
>
> [C.] connecting the first housing to the second housing via a separation interface the first housing and second housing being moveable with respect to each other between a closed position and one or more open positions, ***the separation interface is implemented as a heat sink configured to dissipate heat produced by at least the first modem of the first housing and the second modem of the second housing***.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Tsunoda	US 2009/0207569 A1	Aug. 20, 2009
Aya	US 7,916,463 B2	Mar. 29, 2011
Chang	US 2011/0128705 A1	June 2, 2011
Pantelidou	US 2014/0192716 A1	July 10, 2014

REJECTION

The Examiner rejects claims 15, 21, and 23–27 under 35 U.S.C. § 103 as being unpatentable over Aya, in view of Pantelidou, in view of Tsunoda, and further in view of Chang. Final Act. 2–13.

We select claim 15 as the representative claim for this rejection. As to this rejection, our decision as to the § 103 rejection of claim 15 is determinative as to the § 103 rejection of all the claims. Therefore, except for our ultimate decision, we do not discuss further herein the § 103 rejection of claims 21 and 23–27.

OPINION

We have reviewed the Examiner's rejections in light of Appellant's arguments that the Examiner has erred. Appellant's contentions we discuss are determinative as to the rejection on appeal. Therefore, Appellant's other contentions are not discussed in detail herein.

Appellant raises the following argument in contending that the Examiner erred in rejecting claim 15 under 35 U.S.C. § 103.

> The Office correctly admits that Aya and Pantelidou do not disclose "a first housing including thermal distribution plate for dissipating heat from the first housing and a second housing including thermal distribution plate for dissipating heat from the second housing and a separation interface that connects the first and second housings and functions as the heat sink." However,

the Office asserts that Tsunoda and Chang disclose "the first housing including a first thermal distribution plate for dissipating heat produced by at least the first modem of the first housing," "the second housing including a second thermal distribution plate for dissipating heat produced by at least the second modem of the second housing," and "the separation interface implemented as a heat sink configured to dissipate heat produced by at least the first modem of the first housing and the second modem of the second housing," as recited in claim 15. For the reasons discussed below, the Appellant respectfully disagrees.

Tsunoda discloses a heat diffusing sheet disposed in an operation unit 10 (in a first housing) and heat diffusing sheet disposed in a display unit (in a second housing) of a laptop device where a hinge connects the operation unit and the display unit. Heat produced by a heat generating component (e.g., a CPU) in the operation unit is dissipated from the heat generating component by the heat diffusing sheet of the operation unit to the heat diffusing sheet of the display unit. ***Thus, the device generally dissipates the heat from the base, through the hinge, and out the display.*** However, Tsunoda does not disclose or suggest thermal distribution plates that are disposed in both a first housing and a second housing where both the first housing and the second housing include heat producing elements, as generally recited in claim 15. Rather, Tsunoda discloses only that the operation unit (e.g., base) includes heat producing elements. Accordingly, Tsunoda cannot be relied upon for teaching the claim features, "the first network communications assembly ... including a first modem and at least one antenna, the first housing including a thermal distribution plate for dissipating heat produced by at least the first modem of the first housing" and "the second network communications assembly including a second modem and at least one other antenna, the second housing including a thermal distribution plate for dissipating heat produced by at least the second modem of the second housing."

The claim further recites that the heat sink (e.g., separation interface) is "configured to dissipate heat produced by at least the first modem of the first housing and the second modem of the second housing." ***Because Tsunoda's hinge element dissipates heat produced only in the base portion, the hinge element***

> ***cannot be relied upon for teaching a heat sink "configured to dissipate heat produced by at least the first modem of the first housing and the second modem of the second housing," as claimed.***
>
> Accordingly, claim 15 is patentable at least because Tsunoda fails to disclose or suggest the features of claim 15 and specifically, "the first housing including a thermal distribution plate for dissipating heat produce by at least the first modem of the first housing," "the second housing including a thermal distribution plate for dissipating heat produced by at least the second modem of the second housing," and ***"the separation interface implemented as a heat sink configured to dissipate heat produced by at least the first modem of the first housing and the second modem of the second housing."***
>
> On page 6 of the Final Office Action, the Office correctly notes that Aya, Pantelidou, and Tsunoda fail to disclose or suggest "the thermal distribution plate is used for dissipating heat form modems." The Office cites to Chang for purportedly disclosing or suggesting a heat sink for dissipating heat from a wireless modem. However, the Office has ignored the features explicitly recited in the claim that the modems are positioned in the different housings. Thus, the Office has still not cited a reference or a combination of references that include cellular modems, any associated communication elements, and heat thermal distribution plates being separated in two different housings. Accordingly claim 15 is patentable over the combination of Aya, Pantelidou, Tsunoda, and Chang.

Appeal Br. 8–10 (citations omitted; emphasis added); *see also* Reply Br. 8–9.

We are persuaded the Examiner erred. Claim 15 recites, *inter alia*, that "the separation interface is implemented as a heat sink configured to dissipate heat produced by at least . . . the first housing ***and . . . the second housing***." Appeal Br. 15, emphasis added. Tsunoda discloses a foldable cellular phone 1 including an operation unit 10 and a display unit 20. *See* Tsunoda ¶ 24, Fig. 1. The operation unit 20 includes a housing 2, a heat

diffusing sheet 14-1, a heat dissipating part 15, and a heat generating component 16. *See id.* ¶¶ 26, 27, Figs. 2A, 2B. The display unit 20 includes a housing 3, a heat diffusing sheet 14-2, and a heat receiving part 23. *See id.* ¶ 28, Figs. 2A, 2B. When the cellular phone 1 is in an open state, the heat dissipating part 15 and the heat receiving part 23 are brought into contact with each other. *See id.* ¶ 35, Fig. 2B. Further, heat from the heat generating component 16 in the operation unit 10 is conducted to the heat diffusing sheet 14-1. *See id.* ¶ 36. Heat from the heat diffusing sheet 14-1 is subsequently conducted to the heat dissipating part 15, from which the heat is further conducted to the heat receiving part 23 of the display unit 20. *See id.* Then, the heat is further conducted from the heat receiving part 23 to the heat diffusing sheet 14-2. *See id.* ¶ 37. The heat conducted from the heat receiving part 23 to the heat diffusing sheet14-2 is then diffused in the display unit 20. *See id.*

Thus, rather than disclosing a separation interface implemented as a heat sink configured to dissipate heat produced by a first housing and a second housing, we agree with Appellant that Tsunoda discloses that the combination of the heat dissipating part and the heat receiving part only dissipates heat from the housing in the operation unit to the housing in the display unit and fails to also dissipate heat from the housing in the display unit. The Examiner has not adequately addressed this distinction between claim 15 and Tsunoda, and has not shown that any of the other cited references cures Tsunoda's deficiency. Accordingly, and on this record, we are persuaded that the Examiner erred in rejecting claim 15, and we do not sustain the rejection.

CONCLUSION

The Appellant has demonstrated the Examiner erred in rejecting claims 15, 21, and 23–27 as being unpatentable under 35 U.S.C. § 103.

The Examiner's rejection of claims 15, 21, and 23–27 as being unpatentable under 35 U.S.C. § 103 is **reversed**.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
15, 21, 23–27	103	Aya, Pantelidou, Tsunoda, Chang		15, 21, 23–27

REVERSED