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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT W. ZOPF and BENGT J. BORGSTROM

Appeal 2018-008548
Application 14/606,588
Technology Center 2100

Before ALLEN R. MacDONALD, GREGG I. ANDERSON, and MICHAEL M. BARRY, *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 a Final Rejection of claims 1–20.[2] Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

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[1] Appellant identifies the real party in interest as Avago Technologies General IP (Singapore) Pte. Ltd. Appeal Br. 3.

[2] Appellant misstates that this is an appeal "from the final rejection of claims 1–21." Appeal Br. 1.

CLAIMED SUBJECT MATTER

The claims are directed to "Isolated Word Training and Detection." Spec., Title; *id.* ¶ 2 (Technical Field). Claim 1 is illustrative of the claimed subject matter (emphasis, formatting, and bracketed material added):

> 1. An isolated word training system that comprises:
>
> [A.] a hardware processor;
>
> [B.] a hardware input device configured to receive at least one audio input representation;
>
> [C.] a recognition component executing on the hardware processor, the recognition component configured to generate a phoneme concatenation model of the at least one audio input representation based on a phoneme transcription; and
>
> [D.] an adaptation component executing on the hardware processor, the adaptation component configured to ***generate a first word model*** of the at least one audio input ***based on the phoneme concatenation model***.

REFERENCES[3]

The prior art relied upon by the Examiner is:

Name	Reference	Date
Ganong	US 2014/0278435 A1	Sept. 18, 2014
Ravenscraft	"How to Create a Custom Google Now Command for Anything on Android"	July 30, 2014

[3] All citations herein to references are by reference to the first named inventor/author only.

REJECTIONS

A.

The Examiner rejects claims 1–7 under 35 U.S.C. § 102(a) as being anticipated by Ganong. Final Act. 5–8.

We select claim 1 as the representative claim for this rejection. The contentions discussed herein as to claim 1 are determinative as to this rejection. Therefore, except for our ultimate decision, we do not address claims 2–7 further herein.

B.

The Examiner rejects claims 8–20 under 35 U.S.C. § 103 as being unpatentable over the combination of Ganong and Ravenscraft. Final Act. 9–10.

Our decision herein as to claim 1 is determinative as to the rejection of claims 8–16, 19, and 20. Therefore, except for our ultimate decision, we do not address claims 8–16, 19, and 20 further herein.

We select claim 17 as representative for claims 17 and 18. Therefore, except for our ultimate decision, we do not address claim 18 further herein.

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 rejections on appeal. Therefore, Appellant's other contentions are not discussed in detail herein.

A.

The Examiner finds:

> As per claim 1, **Ganong III et al.** discloses an isolated word training system that comprises:
>
> an input component configured to receive at least one audio input representation; [inter alia: microphone to receive acoustic input; Figs 6-8]
>
> a recognition component configured to ***generate a phoneme concatenation model*** of the at least one audio input representation based on a phoneme transcription;[] [inter alia: VAD processing stage(s) of acoustic input for phoneme; par 0080-0083]
>
> an adaptation component configured to generate a first word model of the at least one audio input ***based on the phoneme concatenation model***. [inter alia: automatic speech recognition (ASR) for acoustic input based on semantic content of speech: par 0084-0090]

Final Act. 6 (emphasis added).

B.

Appellant contends that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 102 because:

> At paragraphs 80-83, Ganong discloses a voice activity detection (VAD) processing stage that uses stored phoneme models to determine the likelihood that acoustic input includes speech. The Examiner equates the claimed "phoneme concatenation model" to the stored phoneme models disclosed by Ganong with respect to this VAD processing stage.
>
> The Examiner then cites to a second processing stage embodiment described at paragraphs 84-90 as allegedly disclosing the claimed "first word model." (final Office Action, p. 6.) Ganong discloses that this additional class of processing stage uses a limited vocabulary to automatically recognize speech in acoustic input. The Examiner equates the claimed "first

> word model" to the limited vocabulary of words disclosed by Ganong with respect to this automatic speech recognition processing stage. . . .
>
> Ganong never discloses that this limited vocabulary of words is generated based on the stored phoneme models disclosed by Ganong at paragraphs 80-83 like the claimed "first word model" is generated based on the claim "phoneme concatenation model" in the above noted claim feature.

Appeal Br. 6.

C.

The Examiner responds:

> Ganong discloses the VAD processing evaluates whether acoustic input from a user contains "phonemic content" (e.g., Characteristic of speech) by using "phoneme models" [par 0081]. Results from "phoneme analysis are propagated to ASR processing stages" [par 0082] ASR processing stage(s) uses VAD processing stages to further evaluate specifics characteristic of the speech, such as, particular words spoken, type of speaker [par 0084] to conclude whether a voice command has been spoken [par. 85]. *Ganong teaches the limited vocabulary is built, learned or modified based on user's behavior (generation of the first word model) [par. 88]*. Thus, it is clear that Ganong teaches the limitation "generating a first word model . . . **based on** the phoneme concatenation model[.]"

Ans. 9.

D.

As articulated by the Federal Circuit, "[a]nticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim." *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983). The requirement that the prior art elements themselves be "arranged as in the claim" means that claims cannot be "treated . . . as mere catalogs of separate parts, in disregard of the part-to-

part relationships set forth in the claims and that give the claims their meaning." *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1459 (Fed. Cir. 1984). "[U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations *arranged or combined in the same way as recited in the claim*, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102." *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (emphasis added). For a claim to be anticipated, each claim element must be disclosed, either expressly or inherently, in a single prior art reference, and the claimed arrangement or combination of those elements must also be disclosed, either expressly or inherently, in that same prior art reference.

We agree with the Examiner's findings to the extent that we agree Ganong describes generating a first word model of the at least one audio input based on a phoneme model. Ganong ¶¶ 80–90, 140–47. However, we agree with Appellant that the language of claim 1 requires a "concatenation" relationship (i.e., linked together, as in a chain) between the phonemes of the phoneme model (i.e., claim 1 requires a phoneme concatenation model), and we disagree with the Examiner's reasoning that Ganong at paragraphs 80–90 are sufficient to show such a "concatenation" relationship. Our concern is that we find nothing in the Examiner's reasoning that is sufficient to show a "concatenation" relationship between the phonemes.

We conclude, consistent with Appellant's arguments that there is insufficient articulated reasoning to support the Examiner's finding that Ganong teaches, "a phoneme concatenation model," as required by claim 1.

Therefore, we conclude that there is insufficient articulated reasoning to support the Examiner's final conclusion that claim 1 was anticipated by Ganong. Because independent claim 8 and dependent claim 19 include "phoneme concatenation model" limitations for which their § 103 rejection relies on the same disclosure from Ganong as discussed above, we also conclude that there is insufficient articulated reasoning to support the Examiner's final conclusion that claims 8 and 19 were obvious at the time of Appellant's invention.

E.

Appellant contends that the Examiner erred in rejecting claim 17 under 35 U.S.C. § 103 because:

> [I]ndependent claim 1 and independent claim[] 17, which recite[s] a similar distinguishing feature, are not rendered unpatentable over Ganong and Ravenscraft, alone or in combination. Further, with respect to independent claim 17, it is also unclear where Ganong or Ravenscraft teach or suggest a user-specified wake-up phrase that is used to generate a user-dependent word model ***at the electronic device***.

Appeal Br. 7.As to Appellant's assertions, we are unpersuaded. Contrary to Appellant's "similar distinguishing feature" assertion at page 7 of the Appeal Brief, claim 17 does not recite the "phoneme concatenation model" distinguishing feature of claim 1. Thus, the "phoneme concatenation model" argument of claim 1 is not commensurate with the scope of the claim 17 language. We do not find a "phoneme concatenation model" in claim 17. Claim 17 is not explicitly so limited, nor does Appellant explain how claim

17 would be inherently so limited, nor do we find alternative language that would similarly mandate the argued limitation.

As to Appellant's above further contention, Appellant merely recites the particular language of claim 17 and asserts the cited prior art reference does not disclose the claim limitations. Without more, this fails to constitute an argument on the merits. See 37 C.F.R. § 41.37(c)(1)(iv); *In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011).

CONCLUSION

The Appellant has demonstrated the Examiner erred in rejecting claims 1–7 as being anticipated under 35 U.S.C. § 102(a).

The Appellant has demonstrated the Examiner erred in rejecting claims 8–16, 19, and 20 as being unpatentable under 35 U.S.C. § 103.

The Examiner did not err in rejecting claims 17 and 18 as being unpatentable under 35 U.S.C. § 103.

The Examiner's rejections of claims 1–16, 19, and 20 as being unpatentable are **reversed**.

The Examiner's rejection of claims 17 and 18 as being unpatentable is **affirmed**.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–7	102	Ganong		1–7
8–20	103	Ganong, Ravenscraft	17, 18	8–16, 19, 20
Overall Outcome			**17, 18**	**1–16, 19, 20**

AFFIRMED-IN-PART