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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SHAHAR FAIANS, AVRAHAM LOUSKY, ELAD HOFFMAN, ALON MOSHE SABBAN, JADE TARNI KAHN, and ROIE MANDLER

Appeal 2018-003595
Application 15/436,020
Technology Center 2600

Before ST. JOHN COURTENAY III, JENNIFER S. BISK, and IRVIN E. BRANCH, *Administrative Patent Judges.*

BRANCH, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE[1]

Pursuant to 35 U.S.C. § 134(a), Appellant[2] appeals from the Examiner's decision to reject claims 1, 3–17, and 19–23.[3] *See* Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held on October 24, 2019.

We AFFIRM.

CLAIMED SUBJECT MATTER

The claims are directed to a computer-implemented method for enrolling voice prints generated from audio streams. Spec. Abstract. Claim 1, reproduced below with disputed limitations emphasized in *italics*, is representative of the claimed subject matter:

> 1. A computer-implemented method comprising:
> receiving audio streams from an audio server that archives audio data of historical communication sessions between customers and representatives;
> for each of at least some of the audio streams generating and enrolling a respective enrolled voice print by:
> a management server using a processor to create *a preliminary association between an audio stream related to a particular one of the historical communication sessions and an identity of a customer that has engaged in*

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[1] We refer to the Specification, filed March 29, 2017 ("Spec."); Final Office Action, mailed August 29, 2017 ("Final Act."); Appeal Brief, filed November 5, 2017 ("Appeal Br."); Examiner's Answer, mailed January 19, 2018 ("Ans."); and Reply Brief, filed February 15, 2018 ("Reply Br.").

[2] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as NICE Ltd. Appeal Br. 1.

[3] Claims 2 and 18 have been indicated to have allowable subject matter. Final Act. 22.

the particular historical communication session based on stored identification information;

determining using the processor a confidence level of the preliminary association based on stored authentication information related to the customer;

if the confidence level is higher than a threshold, sending a request to generate from the audio stream a current voice print associated with the customer;

prior to enrolling the current voice print, comparing using the processor the current voice print associated with the customer to a voice print previously enrolled for the customer and comparing using the processor the current voice print associated with the customer to voice prints associated with other customers; and

enrolling using the processor the current voice print, if the current voice print does not match any other voice prints associated with any of the other customers and if the current voice print is consistent with the voice print previously enrolled for the customer, in a customer voice print database as an enrolled voice print; and

automatically authenticating the customer during a succeeding communication session based on the enrolled voice print.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Wasserblat	US 8,145,562 B2	Mar. 27, 2012
Davis	US 9,197,736 B2	Nov. 24, 2015
GROSS	US 2009/0319270 A1	Dec. 24, 2009
Schmidt	US 2011/0010543 A1	Jan. 13, 2011

REJECTIONS[4]

Claims 1, 4–8, 10–12, 14, 17, and 20–23 stand rejected under

35 U.S.C. § 103(a) as being unpatentable over Wasserblat and GROSS.

Final Act. 11–19.

Claims 3, 13, and 19 stand rejected under 35 U.S.C. § 103(a) as being

unpatentable over Wasserblat, GROSS, and Schmidt. Final Act. 19–20.

Claims 9, 15, and 16 stand rejected under 35 U.S.C. § 103(a) as being

unpatentable over Wasserblat and Davis. Final Act. 21–22.[5]

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[4] Because Appellant does not Appeal the nonstatutory obviousness-type double patenting rejection of all pending claims, we summarily affirm the rejection. Final Act. 6–7; Appeal Br. 5.

[5] To the extent the Examiner's oversight resulted in omitting an additional citation to the GROSS reference to properly support the rejection of claims 9, 15, and 16 (which each depend directly from claim 1), we find the Office Action nevertheless provides Appellant with sufficient notice of the basis for the rejection, and therefore complies with the minimum notice requirements of 35 U.S.C. § 132(a). Under § 132(a), an Office action must at least contain "such information and references as may be useful in judging of the propriety of continuing the prosecution of his application." "Section 132 is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection." *Chester v. Miller*, 906 F.2d 1574, 1578 (Fed. Cir. 1990).

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's arguments. We have considered in this Decision only those arguments Appellant actually raised in the Briefs. Any other arguments Appellant could have made but chose not to make in the Briefs are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2017).

To the extent consistent with our analysis herein, we adopt as our own the findings and reasons set forth by the Examiner in (1) the action from which this appeal is taken (Final Act. 11–22) and (2) the Examiner's Answer in response to Appellant's Appeal Brief (Ans. 3–12) and concur with the conclusions reached by the Examiner. We highlight the following for emphasis.

35 U.S.C. § 103[6]

The Examiner finds most elements of claim 1 are taught by Wasserblat. Final Act. 11–13. The Examiner reasons that one of ordinary skill in the art would have found it obvious at the time of the invention "to modify the system of Wasserblat to incorporate fraud detection as taught by embodiments of Wasserblat to allow for both generation in addition to retrieval of profiles for combined scoring and profiling component." *Id.* at 13. The Examiner further finds that

> [w]hile Wasserblat teaches comparison with known fraudster lists prior to adding a voice print to a user profile, it fails to teach prior to enrolling the current voice print, comparing using the processor the current voice print associated with the customer to a voice print previously enrolled for the customer and comparing

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[6] Because Appellant argues all pending claims based on claim 1 (Appeal Br. 20) we base our analysis on claim 1 and, except for our ultimate conclusion, do not mention the remaining claims further.

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using the processor the current voice print associated with the customer to voice prints associated with other customers.

Id. The Examiner finds that GROSS teaches what is missing from Wasserblat and that claim 1 would have been obvious based on the combined teachings and suggestions of the references. *Id.* at 13–14. Specifically, the Examiner finds, as follows:

> GROSS expressly teaches a machine voice print database in addition to a database of known fraudster information, as well as a human speaker database separate from machine and known fraudster, wherein a when trying to create a new voice print the enrolling customer if determined not to be fraudulent is either permitted to create a new voice print or denied due to the same voice print already existing with another account, such a second verification step would prevent a non-fraudster nonmachine user from creating a new account or print with an existing voice print with another user and thereby safely allowing a new user to create a voice print, thereby reducing duplicate accounts for spam purposes (GROSS 0136, 0127 with fig. 2), wherein this avoids the creation of a fraudulent profile that would otherwise go undetected.
>
> Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Wasserblat to incorporate the above limitation as taught by GROSS to allow for 1) preventing a non-fraudster non-machine user (recorded synthetic input) from creating a new account or print with an existing voice print with another user and 2) thereby safely allowing a new user to create a voice print, thereby reducing duplicate accounts for spam purposes (GROSS 0136, 0127 with fig. 2), such that the new user will not be a recorded/synthetic voice or known-fraudster i.e. imposter, the system of Wasserblat is thereby enhanced to provide another layer of security for duplicate users as expressly shown in GROSS even if the first fraud test is passed.

Id.

Appellant contends that Wasserblat does not teach or suggest "a preliminary association between an audio stream related to a particular one of the historical communication sessions and an identity of a customer that has engaged in the particular historical communication session based on stored identification information" and "determining using the processor a confidence level of the preliminary association based on stored authentication information related to the customer." Appeal Br. 6–11. Appellant contends "Wasserblat teaches two risk scores: a) a risk score as to how [likely] an interaction is fraudulent . . . ; and b) a risk score for the transaction." *Id.* at 7 (citing Wasserblat ¶¶ 32–34).

The Examiner finds the claimed "preliminary association" means "the comparison of features of the input user to existing features of previous users." Ans. 4. The Examiner further finds that Wasserblat discloses:

> extracting a voice print or a voice sample from one or more of the interactions; comparing the voice print or voice sample to one or more speaker models to obtain a similarity score; determining a fraud risk score from the similarity score and from one or more characteristics associated with a transaction related to the interaction; and taking a safety measure when said fraud risk score exceeds a predetermined threshold.

Id. at 4 (quoting Wasserblat, ¶ 14). The Examiner also cites Wasserblat's Abstract, which discloses:

> one or more interactions is correlated with one or more transactions, the interactions . . . and transactions features are combined, and features are extracted from the combined structure. The features are compared against one or more profiles, and a combined risk score is determined for the interactions or transactions. If the risk score exceeds a predetermined threshold, a preventive/corrective action can be taken.

Id.

We understand the Examiner to map the claimed "preliminary association" to Wasserblat's "similarity score," which is a comparison of a voice print from a customer interaction to a speaker model. We understand the Examiner to map the claimed confidence level to Wasserblat's fraud risk score, which is based on the similarity score. We note that, consistent with the Examiner's findings, Wasserblat discloses numerous comparisons of interactions, including voice samples and transactions therefrom, with historical interactions, including stored voice prints. *See* Wasserblat Abstract, ¶ 14. We note that, while Wasserblat discloses these comparisons for the purpose of fraud detection, consistent with the Examiner's findings, Wasserblat discloses taking some action based on a comparison exceeding a threshold. *Id. See* Final Act. 11–14; Ans. 4–11. We agree with the Examiner's conclusion as follows:

> it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Wasserblat to incorporate the above limitation as taught by GROSS to allow for 1) preventing a non-fraudster non-machine user (recorded synthetic input) from creating a new account or print with an existing voice print with another user and 2) thereby safely allowing a new user to create a voice print, thereby reducing duplicate accounts for spam purposes (GROSS 0136, 0127 with fig. 2), such that the new user will not be a recorded/synthetic voice or known-fraudster i.e. imposter, the system of Wasserblat is thereby enhanced to provide another layer of security for duplicate users as expressly shown in GROSS even if the first fraud test is passed.

Final Act. 14.

Appellant does not persuasively rebut the Examiner's construction of "preliminary association." *See generally* Appeal Br.; Reply Br. Nor does

Appellant address the Examiner's mapping. *Id.* Specifically, Appellant does not rebut the Examiner's mapping of the claimed preliminary association to Wasserblat's "similarity score," upon which the fraud risk score is based. Reply Br. 1–2. *See* Wasserblat, ¶ 14. Appellant attempts to traverse the Examiner's findings by focusing on Wasserblat's "risk scores" (*see, e.g.*, Appeal Br. 7), but nowhere considers the possibility of Wasserblat's "risk score" being the claimed "preliminary association."

Accordingly, we are unpersuaded of error in the Examiner's finding that Wasserblat teaches "a preliminary association between an audio stream related to a particular one of the historical communication sessions and an identity of a customer that has engaged in the particular historical communication session based on stored identification information" and "determining using the processor a confidence level of the preliminary association based on stored authentication information related to the customer."

Appellant makes several additional arguments, which do not persuade us of error for the reasons which follow. Specifically, Appellant argues "Wasserblat's risk scores are never applied in Wasserblat as the confidence level is in the current claims, and to modify Wasserblat to do so would impermissibly change the principle of operation of Wasserblat." Appeal Br. 11. This argument does not persuade us that merely changing from fraud detection based on compared voice samples to gating a voice sample update amounts to an impermissible change in Wasserman's principle of operation.

Appellant also argues "Wasserblat does not teach or suggest actually enrolling voice prints." Appeal Br. 14; *see id*. at 12–15. This line of argument is unpersuasive because it is based on the teachings of Wasserblat alone and does not consider the teachings of GROSS or, more importantly,

what the combined teachings of the references would have taught or

suggested to one of ordinary skill in the art. "Non-obviousness cannot be

established by attacking references individually where the rejection is based

upon the teachings of a combination of references." *In re Merck & Co.*, 800

F.2d 1091, 1097 (Fed. Cir. 1986).

Appellant also argues as follows:

> to modify Wasserblat so that its combined fraud probability was
> only computed if a risk score passed a threshold, or so that its
> comparison to its black list of fraudsters was only done if a score
> was a certain amount, would prevent Wasserblat from working
> as intended, which is to produce a combined fraud probability
> based on the factors presented in para. [0068] regardless of the
> individual factors.

Appeal Br. 18.

Appellant also argues "Gross only teaches using voice prints to

authenticate a person, not to decide whether or not to enroll a voice print.

Neither Gross nor Wasserblat teaches enrolling voice prints" and "if Gross

were combined with a system such as the Office Action's interpretation of

Wasserblat, the resulting system would not work." Appeal Br. 19–20. This

argument is unpersuasive because it argues against a bodily incorporation of

the teachings of Wasserblat and Gross. "The test for obviousness is not

whether the features of a secondary reference may be bodily incorporated

into the structure of the primary reference. . . . Rather, the test is what the

combined teachings of [those] references would have suggested to those of

ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). *See

also In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) ("[I]t is not necessary

that the inventions of the references be physically combinable to render

obvious the invention under review"); and *In re Nievelt*, 482 F.2d 965, 968

(CCPA 1973) ("Combining the *teachings* of references does not involve an ability to combine their specific structures"). Rather, "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR*, 550 U.S. at 417.

We further note—without relying on—the fact that claim 1 recites numerous conditional limitations (e.g., "if the confidence level is higher than a threshold . . . ," and "if the current voice print does not match any other voice prints associated with any of the other customers and if the current voice print is consistent with the voice print previously enrolled for the customer . . ."). Should further prosecution ensue based on the presently-pending claims, the Examiner might consider whether the conditional limitations of claim 1 should be given patentable weight. *See Ex parte Schulhauser,* No. 2013-007847, 2016 WL 6277792, at *3–6 (PTAB Apr. 28, 2016) (concluding the broadest reasonable interpretation of a claim encompassed situations in which conditional method steps "need not be reached") (precedential).

CONCLUSION

We affirm the Examiner's decision to reject claims 1, 3–17, and 19–23 as obvious.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–23		Nonstatutory Double Patenting	1–23	
1, 4–8, 10–12, 14, 17, 20–23	103(a)	Wasserblat, GROSS	1, 4–8, 10–12, 14, 17, 20–23	
3, 13, 19	103(a)	Wasserblat, GROSS, Schmidt	3, 13, 19	
9, 15, 16	103(a)	Wasserblat, Davis, GROSS	9, 15, 16	
Overall Outcome			1–23	

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED