Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte AKITO NAGAI,
KENJI KITA, and
SHIGEKI SAGAYAMA

Appeal No. 95-4221
Application No. 08/086,569[1]

HEARD: 4 November 1998

Before HAIRSTON, KRASS and TORCZON, Administrative Patent Judges.

TORCZON, Administrative Patent Judge.

DECISION ON APPEAL

In this appeal under 35 U.S.C. § 134 from the final rejection of claims 4-8, all of the pending claims, we reverse.

BACKGROUND

The claimed subject matter on appeal pertains to a continuous speech recognition device. Appellants argue the claims as a single group comprising two independent apparatus claims (claims 4 and 8) and a single independent method claim (claim 6). Claims 4 and 8 are written in means-plus-function

[1] Attorney docket no. 394-1162A (50428-854).

language, but the specification identifies no corresponding structure, so they are principally defined by their function. Consequently, we select method claim 6 as representative of all of the claims on appeal. The examiner has rejected claims 4-8 as anticipated under 35 U.S.C. § 102(e) by

Bahl et al. (Bahl) 5,033,087 16 July 1991
filed 14 Mar. 1989

We reproduce claim 6 below with enumeration and labels from Bahl indicating the examiner's reading of the claim on the reference:

> A continuous speech recognition method, comprising the steps of:
>
> (1) in response to a currently verified phoneme, predicting a subsequent phoneme using an action entry in a stored left to right (LR) parser table **1030**, **(8:1-31 and 53-54)**;
>
> (2) predicting a phoneme context for the predicted subsequent phoneme;
>
> (3) verifying existence of the predicted subsequent phoneme in the input speech signal **(phone machines, 6:48-62)** using a phoneme context dependent type hidden Markov phoneme model **(Figs. 4A & 4B Markov models)** which corresponds to the predicted phoneme context to calculate a probability that the predicted subsequent phoneme exists in the input speech signal;
>
> (4) executing steps (1) through (3) repeatedly, each repetition using the predicted subsequent phoneme as a new currently verified phoneme to thereby produce a symbol string of verified phonemes

representative of a sentence or phrase in the input speech signal as a recognition result **(19:1-68)**.

DISCUSSION

A claim is anticipated under subsection 102(e) when the reference expressly or inherently discloses every limitation in the claim. We agree with the examiner that Appellants' claimed subject matter and the Bahl reference address a similar problem in a similar technology and, consequently, share many similar features. We agree with Appellants, however, that Bahl does not disclose all elements of their claims.

Appellants' method predicts a next phoneme based on a currently verified phoneme and a state table representing a grammar, and then verifies the prediction against a statistical model of the next phoneme actually received. The progression from prediction to verification is common to all of Appellants' claims. We do not find the claimed progression in Bahl.

The examiner relies on two portions of Bahl to teach the prediction step or function. The first portion (8:1-31) describes Bahl's verification process using the language model **1010**. We cannot reasonably construe Appellants' phoneme prediction step to read on phoneme verification in Bahl's

language model **1010**. The other portion (8:53-54) specifically addresses fenemic recognition to correct errors caused by coarticulation. Although Appellants' claims do not exclude fenemic recognition, fenemic recognition is distinct from Appellants' claimed subject matter. Consequently, we do not find Bahl to have anticipated any of the claims on appeal.

DECISION

The rejection of claims 4-8 under subsection 102(e) over Bahl is

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)	
ERROL A. KRASS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
RICHARD TORCZON Administrative Patent Judge	)	

RT/pgg

cc: McDERMOTT, WILL & EMERY
99 CANAL CTR PLZ STE 300
ALEXANDRIA VA 22314