(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2003/0128848 A1**

Burnett (43) **Pub. Date:** **Jul. 10, 2003**

(54) **METHOD AND APPARATUS FOR REMOVING NOISE FROM ELECTRONIC SIGNALS**

(76) Inventor: **Gregory C. Burnett**, Livermore, CA (US)

Correspondence Address:
**Shemwell Gregory & Courtney LLP
Suite 201
4880 Stevens Creek Boulevard
San Jose, CA 95129 (US)**

(21) Appl. No.: **10/301,237**

(22) Filed: **Nov. 21, 2002**

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/905,361, filed on Jul. 12, 2001.

Publication Classification

(51) **Int. Cl.^{7}** **A61F 11/06**; G10K 11/16; H03B 29/00
(52) **U.S. Cl.** **381/71.8**; 381/71.14
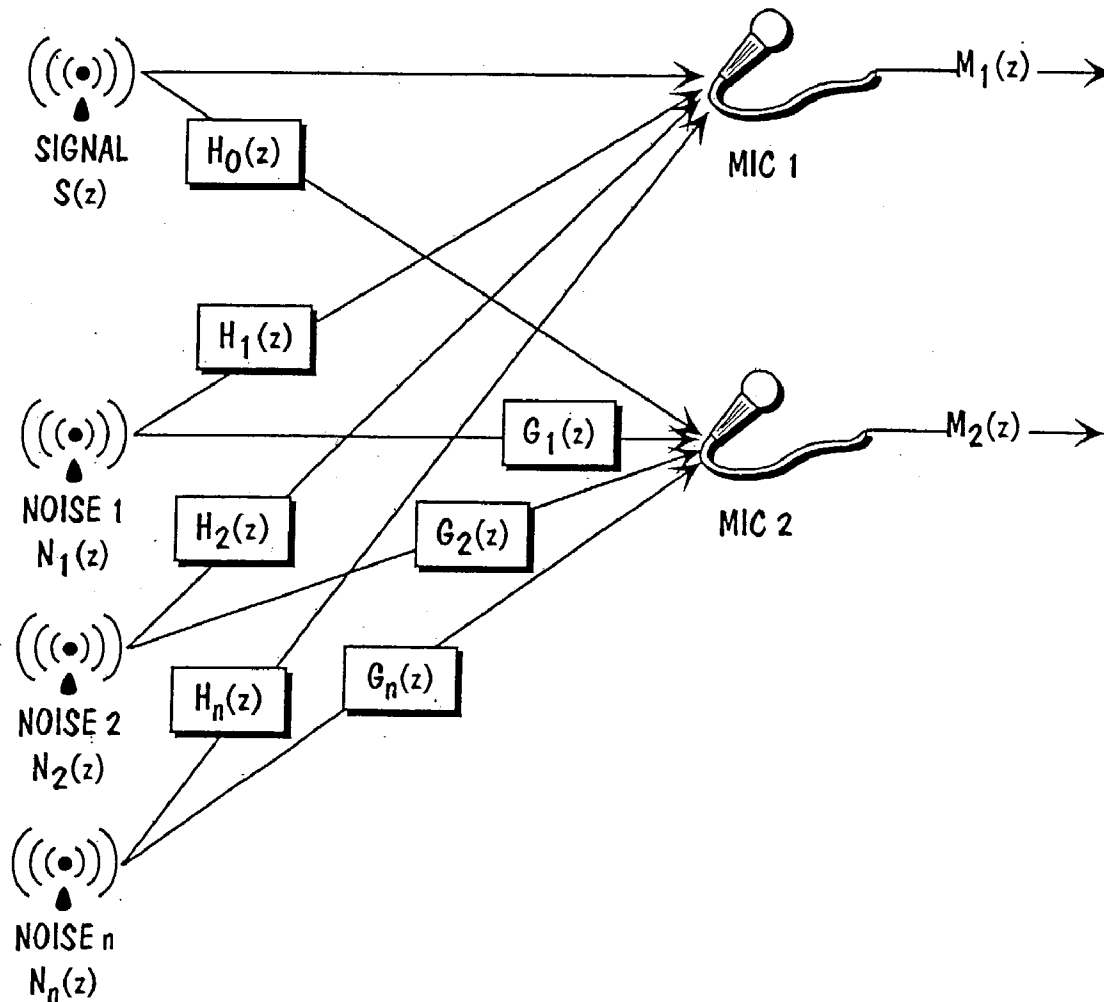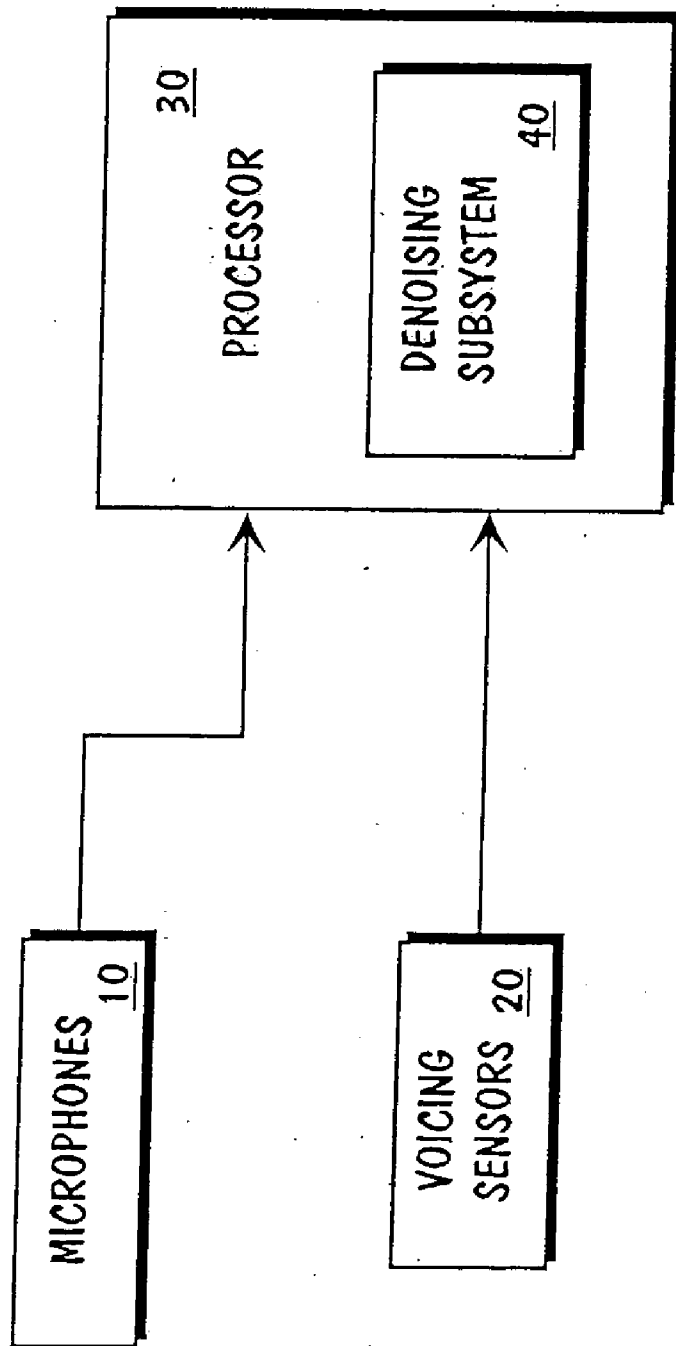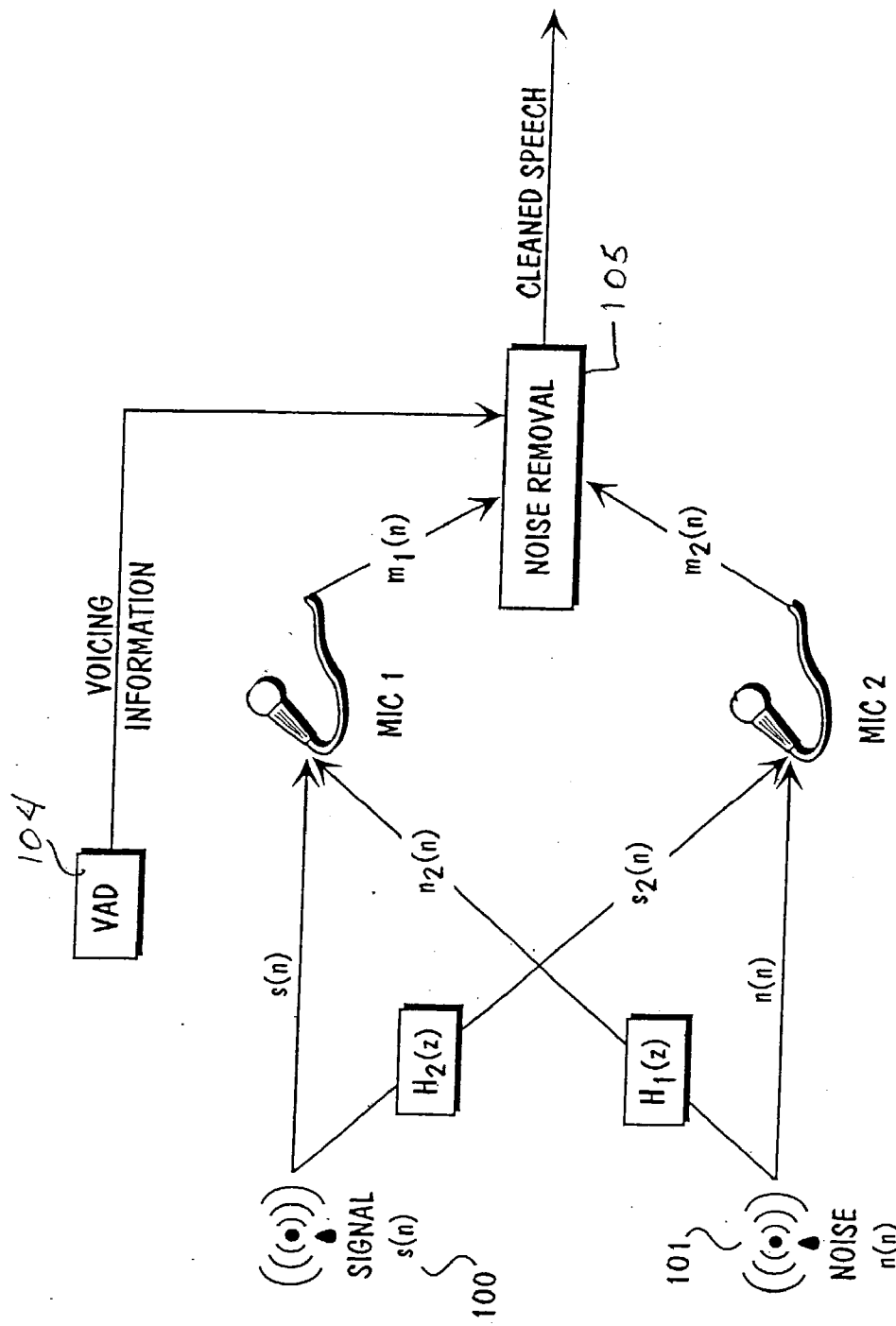
(57) **ABSTRACT**

A method and system for removing acoustic noise removal from human speech is described. Acoustic noise is removed regardless of noise type, amplitude, or orientation. The system includes a processor coupled among microphones and a voice activation detection ("VAD") element. The processor executes denoising algorithms that generate transfer functions. The processor receives acoustic data from the microphones and data from the VAD. The processor generates various transfer functions when the VAD indicates voicing activity and when the VAD indicates no voicing activity. The transfer functions are used to generate a denoised data stream.

PROCESSOR 30

DENOISING SUBSYSTEM 40

MICROPHONES 10

VOICING SENSORS 20

FIG. 1

FIG. 2

FIG. 3

FIG. 4

DOCKET ALARM
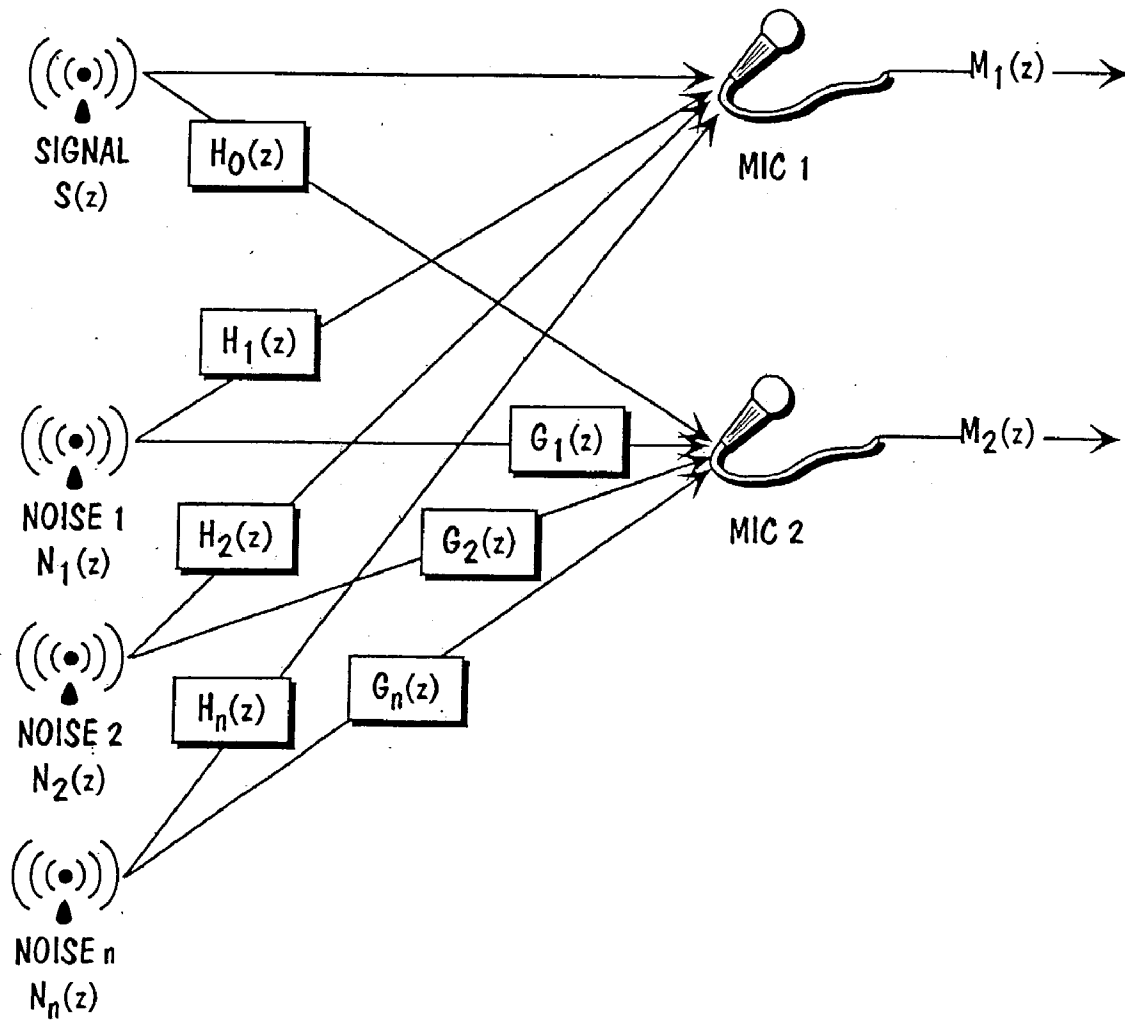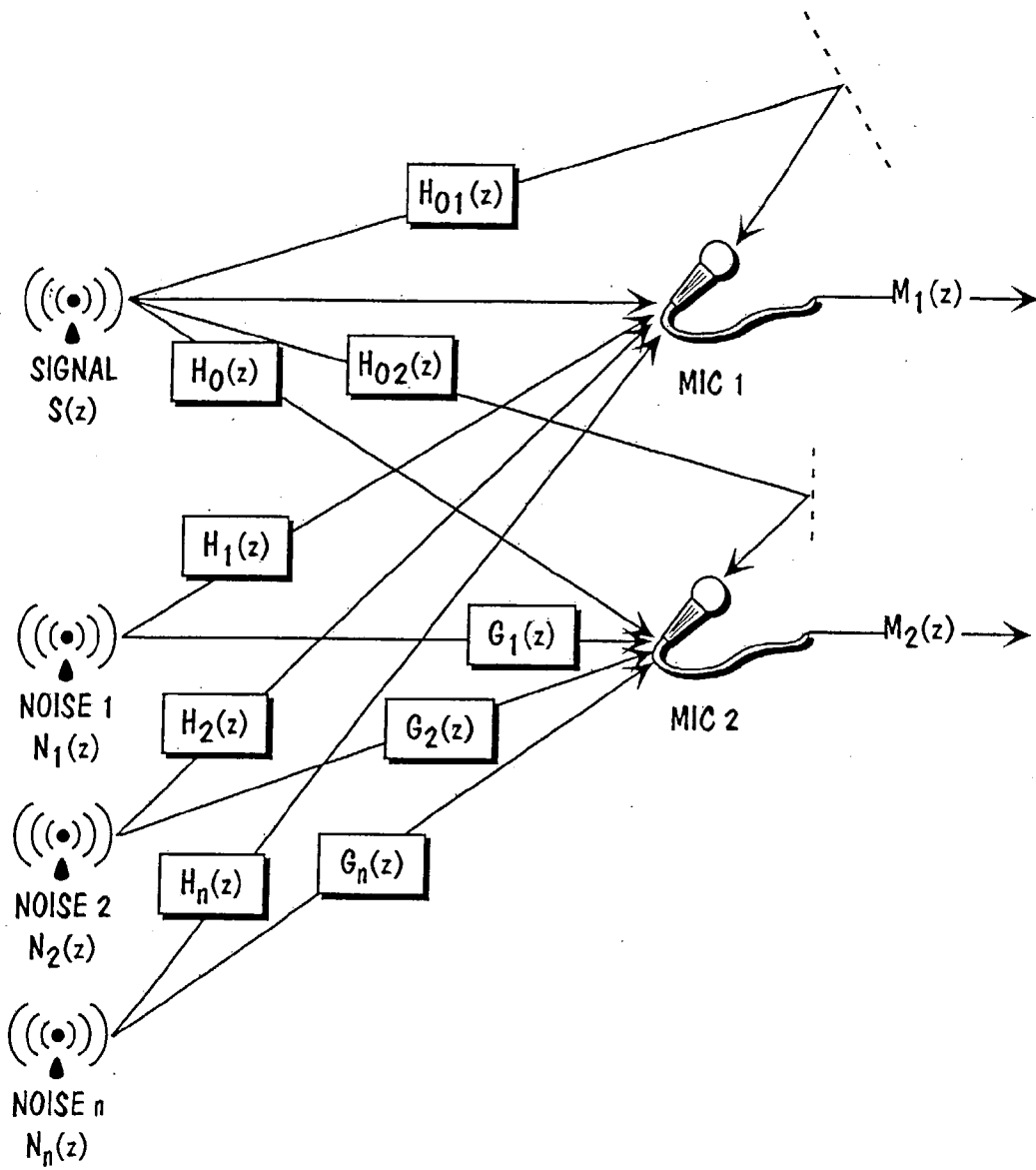
Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.