



Office of Technology Management

MULTI-FETUS HEART MONITOR™ CARDIAC SOUND SEPARATOR™

Technology Reference

CW045, CX058, CX072

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Field

Sound Processing

Data Processing

Cardiology

Obstetrics

Medical Devices

Key Words

Electronic stethoscope

Cardiology

Obstetrics

Fetus

License Status

Seeking Licensing and Development Partner(s)

Patent Status

Patent Applications Filed

Overview

Historically acoustic stethoscopes have been used, but electronic stethoscopes exist and are available from a number of companies. Electronic stethoscopes can provide: a clearer sound, an amplified signal, filter the signal into frequency ranges for further processing, separate sounds temporally or filter out background noise. The sounds can be transmitted to either an audio device such as a headset or amplifier and speakers for listening, a computer, a recording device or a storage device. Because electronic stethoscopes provide an electronic signal, they can be saved in the patients file for later comparison and/or used in telemedicine. Electronic stethoscopes are particularly useful in high noise situations such as emergency rooms or accident sites or where the doctor has lost some hearing sensitivity.

Technical Summary

This invention is an improvement on current electronic stethoscopes that will assist a medical professional in listening to the heart sounds of an individual fetus in a multiple pregnancy, or in diagnosing heart problems, primarily heart valve abnormalities. It will do this by obtaining a mixture of heart sounds using a modified electronic stethoscope, using software to electronically separate the various sounds emanating from the heart(s) into discrete non-interfering sounds that are identified with the different sound sources, such from the individual fetus' heart or from a single child or adult's heart's mitral valve, aortic valve, mechanical replacement valves etc. It does this without altering the original sounds.

Benefits

- Provide unaltered separate sounds
- Separate heart sounds from each fetus in a multiple birth or a single sound or combination of sounds from any of the mechanical areas in a baby's, child's or adult's heart

Areas of Application

- Multiple Births
- Cardiology Diagnostics
- Automated Diagnostics
- Telemedicine

Stage of Development

- Proof of Concept