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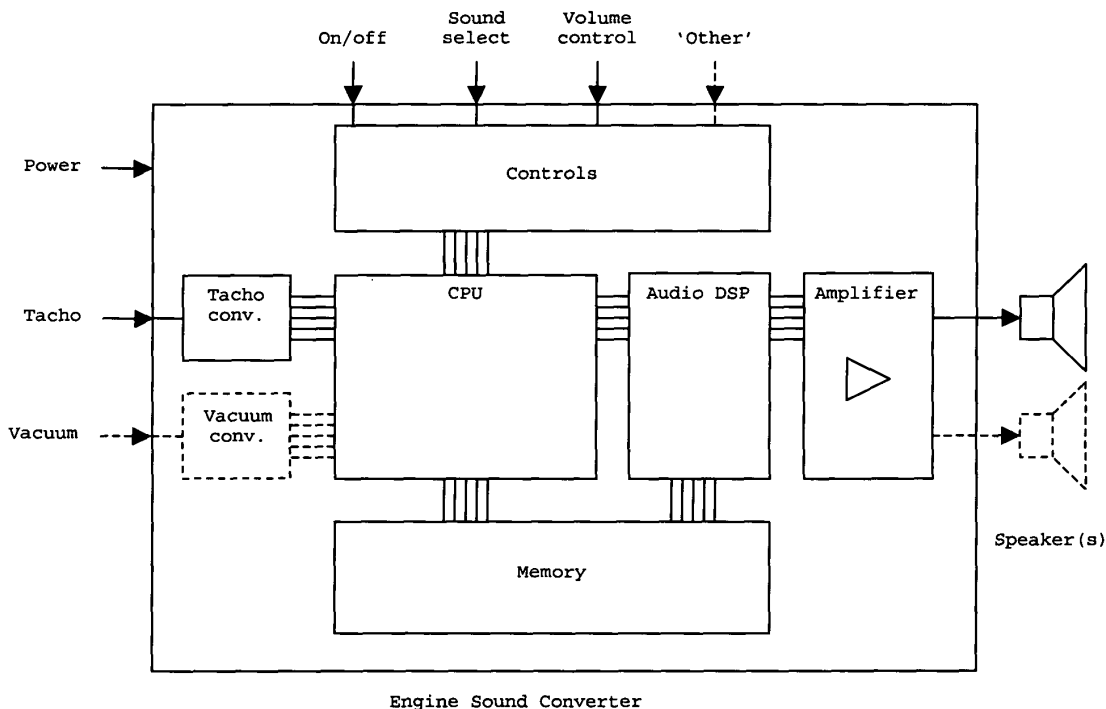
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(54) **Electronic conversion/enrichment of engine sound**

(57) A CPU uses the measured speed (Tacho) of an existing engine, to produce another engine sound, which

is stored into digital memory. The digital engine sound is converted by a sound processor and amplified by a sound amplifier to one or more speakers.

Fig.2 Functional diagram example



Legend

-  Multiple connections possible
-  Optional

Description

[0001] The invention relates to an electronic and digital circuit to make it possible to produce extra engine sound to an existing engine. The engine speed is measured. One or more other engine sounds are stored into digital memory. Based on the speed of the engine an extra engine sound will be produced by controls of a CPU and a Digital Sound Processor (DSP).

[0002] The object is to produce an extra or special engine sound. This is normally done on a mechanical way, like an exhaust systems or extra parts on an engine. This invention provides the possibilities to add extra sound to an engine or make an engine sound like a complete other engine. For example a normal car (or any other device with an engine) can sound like an 8 or 12 cylinder car, a Formula-One racing car, turbo charged car, turbine driven device, etc.

Basically it adds, enriches or expands the engine sound of a vehicle. See figure 1, global schematics on page 4.

[0003] This object is achieved by storing one or more engine sounds on digital memory. The digital produced engine sound will follow the speed of the original engine.

Functionality

[0004] The functionality can be realised by a CPU controlled electronic circuit. See figure 2, the functional diagram example on page 4. Detailed materials and component selection can be varying, since many different electronic and digital parts are available in the market. Therefor a basic explanation is provided how the functionality can be realised.

[0005] The original engine can be in many vehicles like cars, motorbikes, and trucks. If a 'car' is mentioned in this document, all kind of these vehicles is actually referred to. The vehicle where this device can be used is not limited to a specific type or model.

Engine speed

[0006] The speed of the original engine is measured. This can be done by using the pulses for the engine speed indicator (Tacho or RPM) like most modern cars have. Separate speed pick-up devices can also be used to achieve this.

Controls

[0007] The device can be turned on and off. If more engine sounds are stored into memory, the user can select the desired sound that must be produced. Volume of the produced sound can be adjusted.

Memory

[0008] The memory is mainly used to store one or more different engine sounds. Memory can also be used for

remembering settings and variables of the device.

CPU

[0009] The CPU controls all data. Based on the speed of the engine and the selected sound by the user, the audio sound processor (DSP) will receive audio sounds from the memory.

Audio sound processor (DSP)

[0010] The DSP converts the digital sounds into an analogue audio signal.

Amplifier

[0011] The audio amplifier converts the analogue sound of the DSP to the desired signal level for a speaker.

[0012] All together it is also possible to produce sound variations while increasing or decreasing engine speed, or varying volume based on speed or change in speed.

Extra possible features

[0013]

- Vacuum or torque measurement of the original engine to vary sound or Volume.
- Other audio sound enhancement like stereo or more sound channels, loudness, 3D sound, surround, etc.

Claims

1. Electronic and digital circuit to make it possible to produce extra engine sound to an existing engine. **Characterised by** measuring the engine speed and based on this speed an extra engine sound, stored into digital memory, will be produced by controls of a CPU and a Digital Sound Processor. The sound is amplified and produced by one or more speakers.

Fig.1 Global Schematics

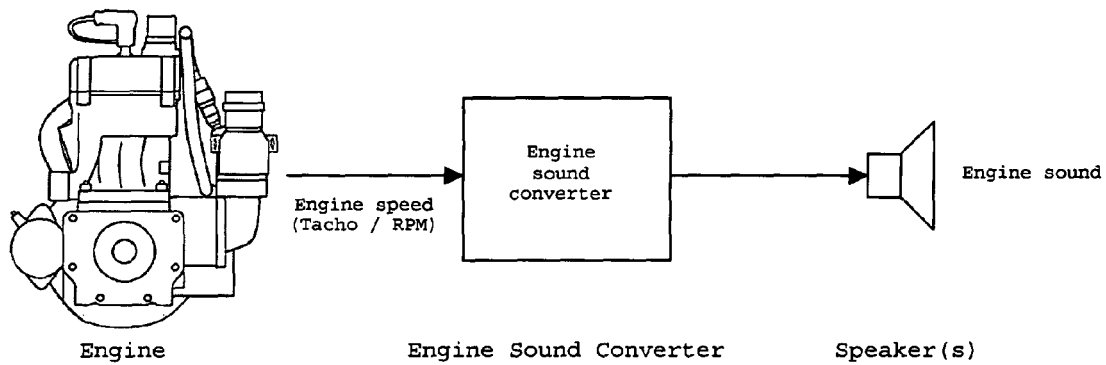
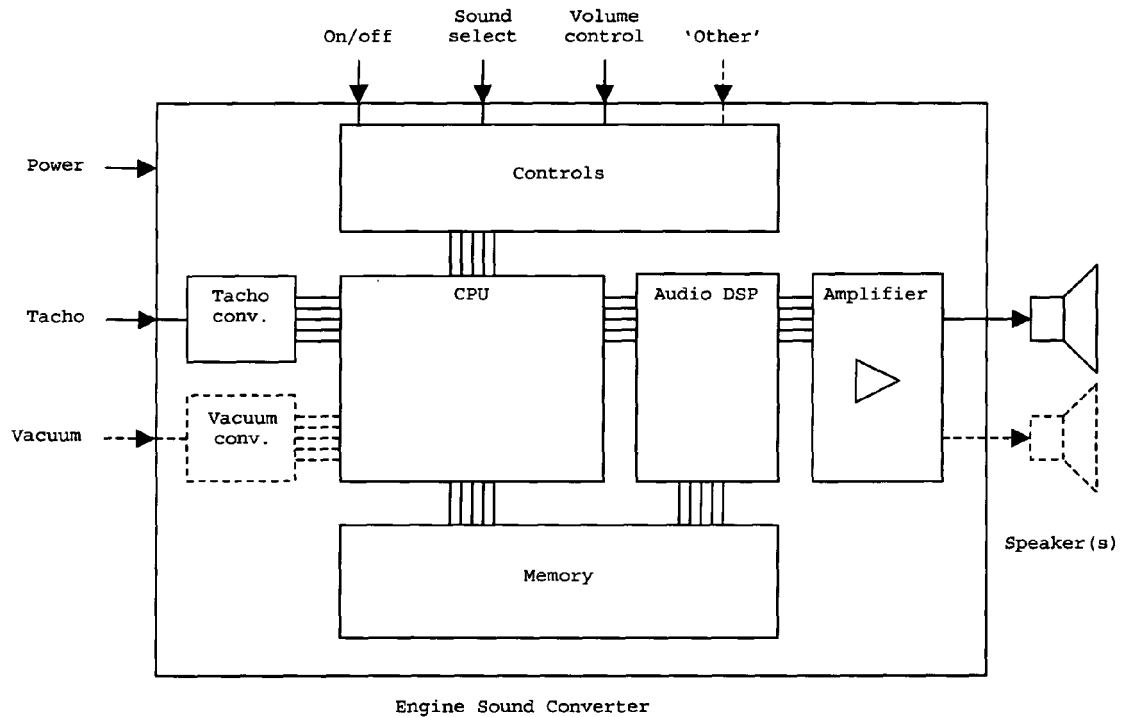


Fig.2 Functional diagram example



Legend

- 
 Multiple connections possible
- 
 Optional



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EUROPEAN SEARCH REPORT

Application Number
EP 07 07 5519

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Place of search Munich		Date of completion of the search 28 January 2008	Examiner Passier, Martinus	
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Place of search Munich		Date of completion of the search 28 January 2008	Examiner Passier, Martinus
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 07 5519

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The members are as contained in the European Patent Office EDP file on
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