Fig. 1

(54) Title: SYSTEMS AND METHODS FOR NOISE REDUCTION

(57) Abstract: Systems and methods are provided for noise reduction. An input audio signal is received. A target gain corresponding to a target volume level is determined. One or more increments of gain change are determined to reach the target gain. A first non-zero amplitude in the input audio signal is detected. The first non-zero amplitude is not within a predetermined range of zero amplitude. Upon the detection of the first non-zero amplitude in the input audio signal, the one or more increments of gain change are applied at one or more zero-crossing points of the input audio signal. The input audio signal is within the predetermined range of zero amplitude at the one or more zero-crossing points. An output audio signal is generated.
A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G10L 21/0208; H03G 3/34, 3/20 (2015.01)
CPC - G10L 21/0208; H03G 3/34, 3/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8): H03G 3/00, 3/20, 3/32, 3/34; H03M 1/18; H04B 15/00 (2015.01)
CPC: G10L 21/0208; H03G 3/00, 3/20, 3/32, 3/34, 3/3089; H03M 1/18; Y02B 70/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 5,838,269 A (XIE, Z.) November 17, 1998; figures 1 and 2; abstract; column 2, lines 11-13; column 3, lines 1-4 and 49-52; column 6, lines 34-61; column 7, lines 53-58; column 7, line 67 to column 8, lines 5-8, column 8, lines 3-8, 14-17, 37-45 and 50-53</td>
<td>1-20</td>
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* Further documents are listed in the continuation of Box C.

Date of the actual completion of the international search: 27 February 2015 (27.02.2015)

Date of mailing of the international search report: 12 MAR 2015

Name and mailing address of the ISA/US

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