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(12) **United States Patent**  
**Imai et al.**

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(45) **Date of Patent: Jan. 14, 2003**

(54) **TRANSMITTING APPARATUS AND METHOD, RECEIVING APPARATUS AND METHOD, AND PROVIDING MEDIUM**

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\* cited by examiner

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(57) **ABSTRACT**

The invention intends to decode and reproduce digital audio signals in real time. A transmission rate of a transmission line is detected, and a selection instructing unit instructs, to an encoding selecting circuit, a coding method which can provide coded data having a bit rate corresponding to the detected transmission rate. In response to the instruction from the selection instructing unit, the encoding selecting circuit controls a switch so as to select one of a plurality of encoders for encoding an audio signal with different coding methods. Each frame of the audio signal cut out by a frame cutting circuit is supplied to the encoder selected by the switch for encoding thereof. Resulting coded data is outputted after an ID representing the instructed coding method has been added to the coded data in a header inserting circuit.

(21) Appl. No.: **09/299,509**

(22) Filed: **Apr. 26, 1999**

(30) **Foreign Application Priority Data**

May 8, 1998 (JP) ..... 10-125633

(51) **Int. Cl.**<sup>7</sup> ..... **H04B 1/38**; H04L 5/16

(52) **U.S. Cl.** ..... **375/222**; 375/220; 375/219

(58) **Field of Search** ..... 375/219, 220, 375/221, 222, 257; 370/537, 469, 453

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**48 Claims, 17 Drawing Sheets**

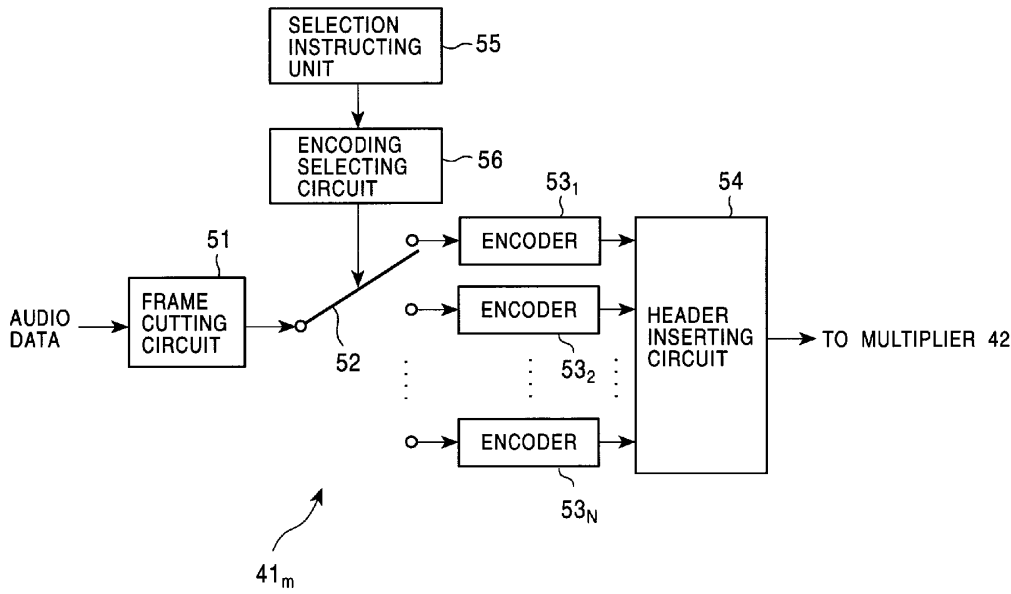


FIG. 1

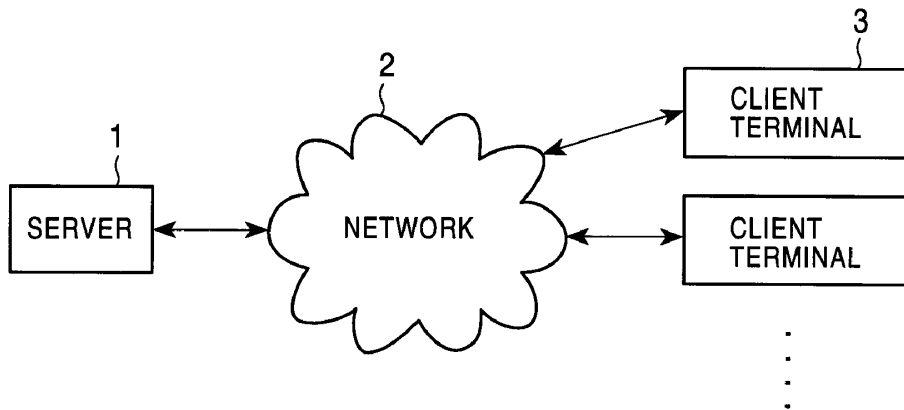


FIG. 2

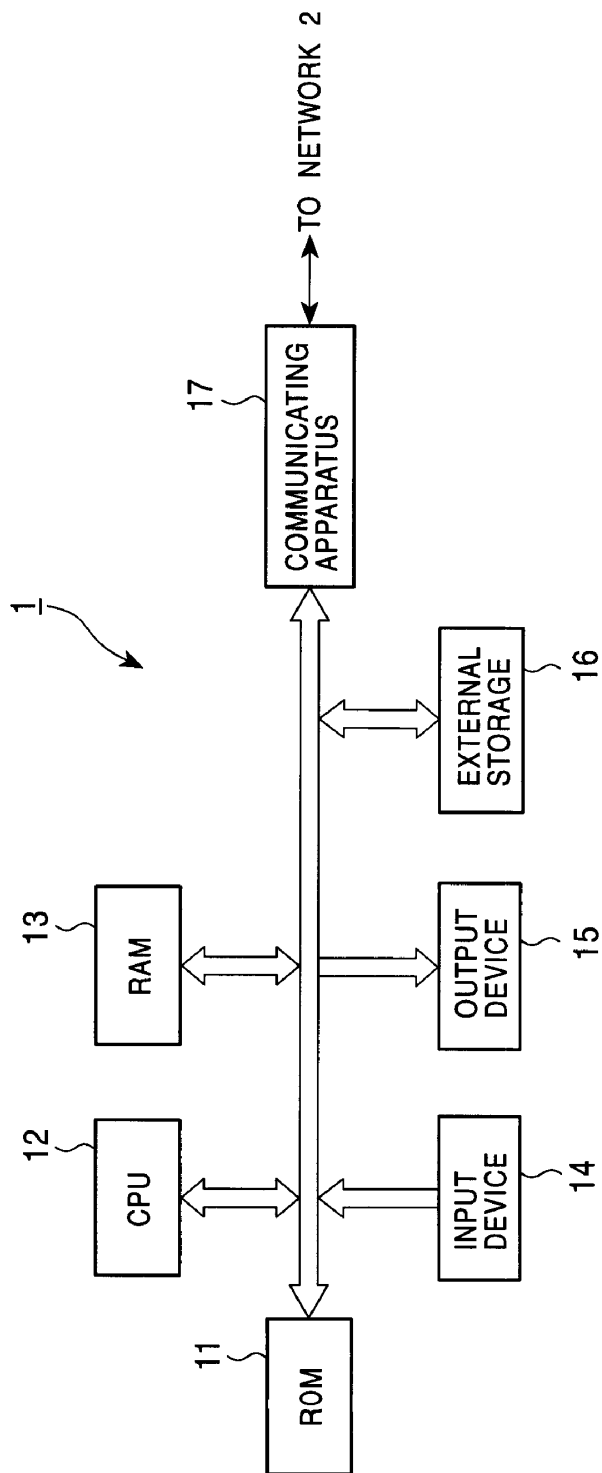


FIG. 3

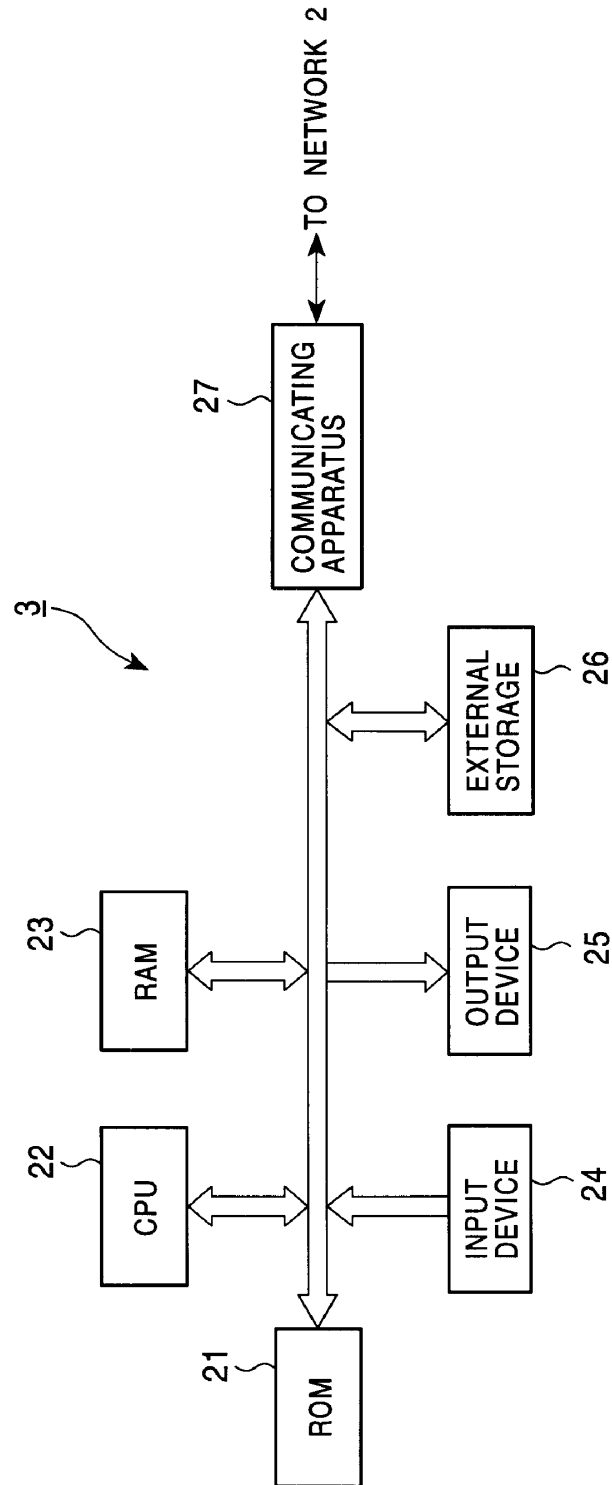
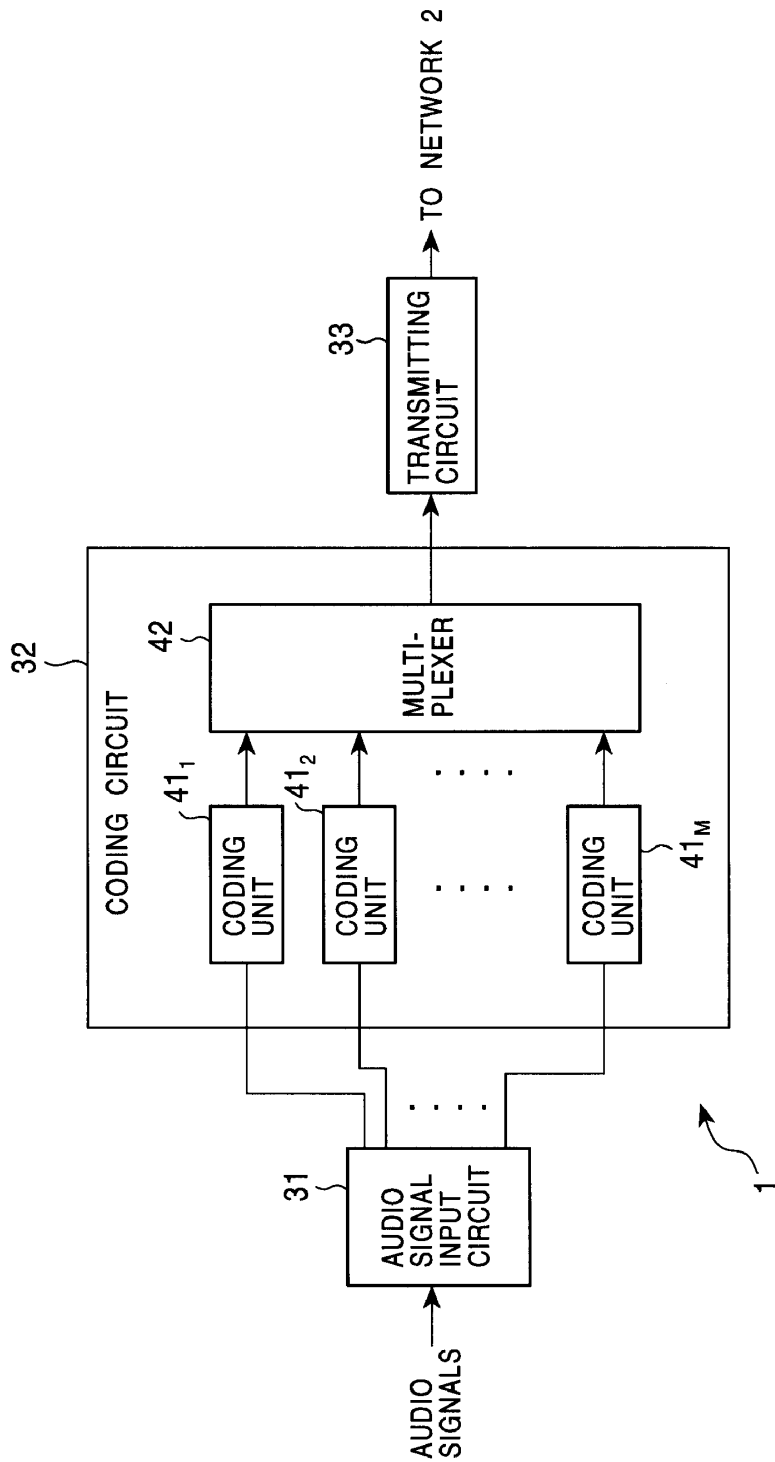


FIG. 4



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