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Alon et al.

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[54] **METHODS AND APPARATUS FOR SIMULTANEOUSLY READING MULTIPLE TRACKS OF AN OPTICAL STORAGE MEDIUM**

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[*] Notice: This patent is subject to a terminal disclaimer.

[21] Appl. No.: **09/203,294**

[22] Filed: **Dec. 1, 1998**

Related U.S. Application Data

[60] Division of application No. 08/804,105, Feb. 20, 1997, Pat. No. 5,907,526, which is a continuation-in-part of application No. 08/559,429, Nov. 15, 1995, Pat. No. 5,627,805.

[51] Int. Cl.⁷ **G11B 5/09**; G11B 3/74; G11B 7/00

[52] U.S. Cl. **369/49**; 369/95; 369/124

[58] Field of Search 369/32, 33, 47, 369/48, 49, 50, 54, 58, 60, 124, 95

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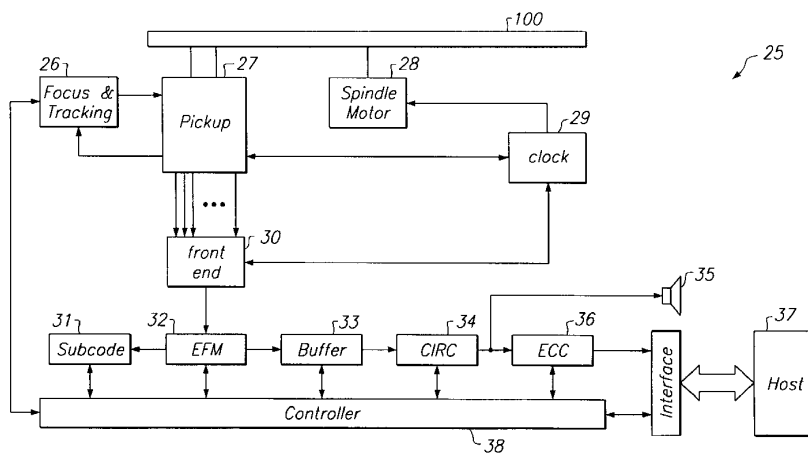
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[57] ABSTRACT

Methods and apparatus are provided for synchronously reading data from multiple tracks of an optical disk using multiple illumination beams. Circuitry is provided for use with a photodetector array to read and buffer data in parallel from the multiple adjacent tracks, while asynchronously providing processed data to a host processor. Circuitry is further provided for correcting phase errors resulting from variations in the linear velocity of the tracks being read, depending upon the radial position of the tracks.

20 Claims, 9 Drawing Sheets



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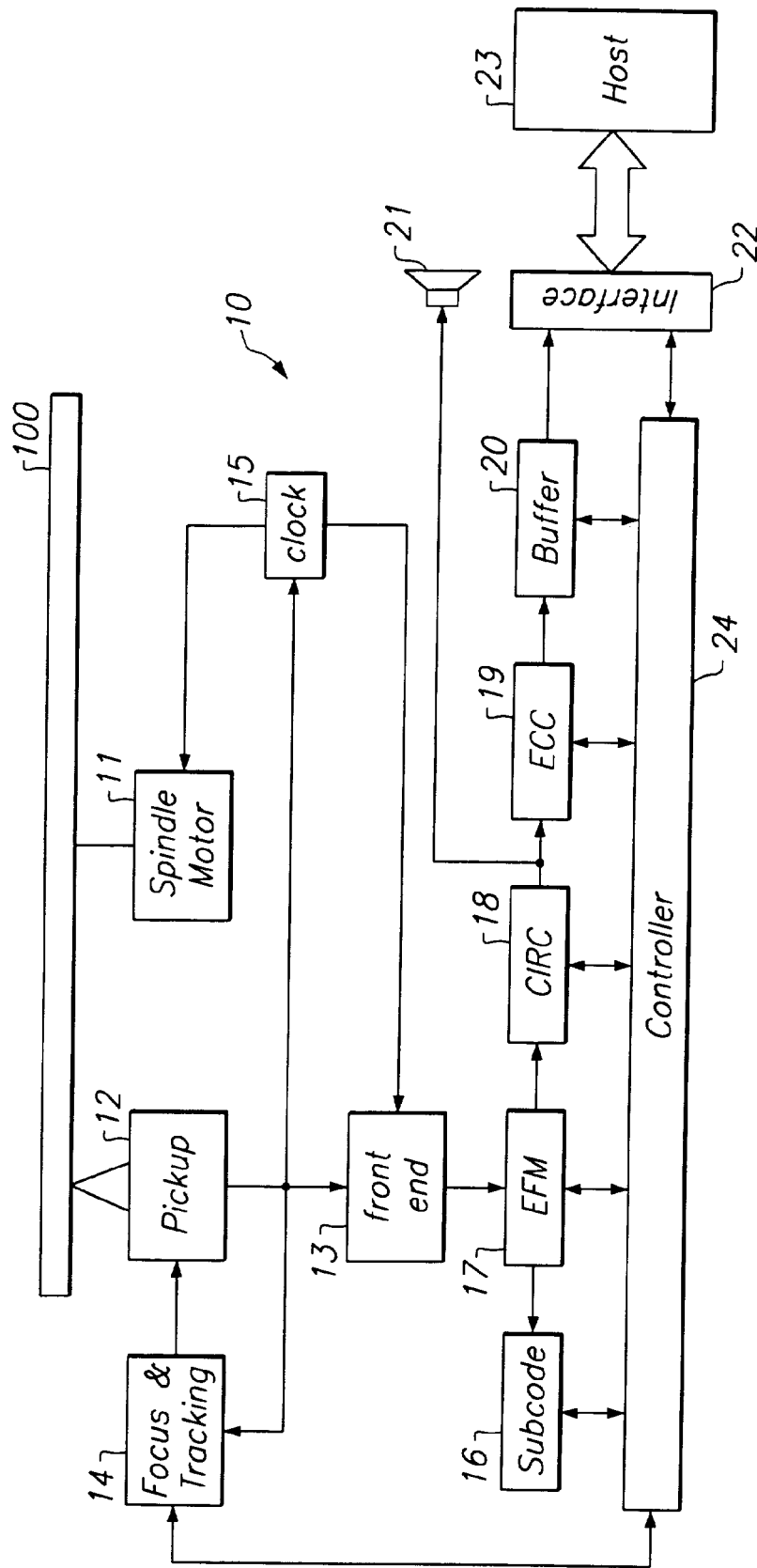


FIG. 1 (Prior Art)

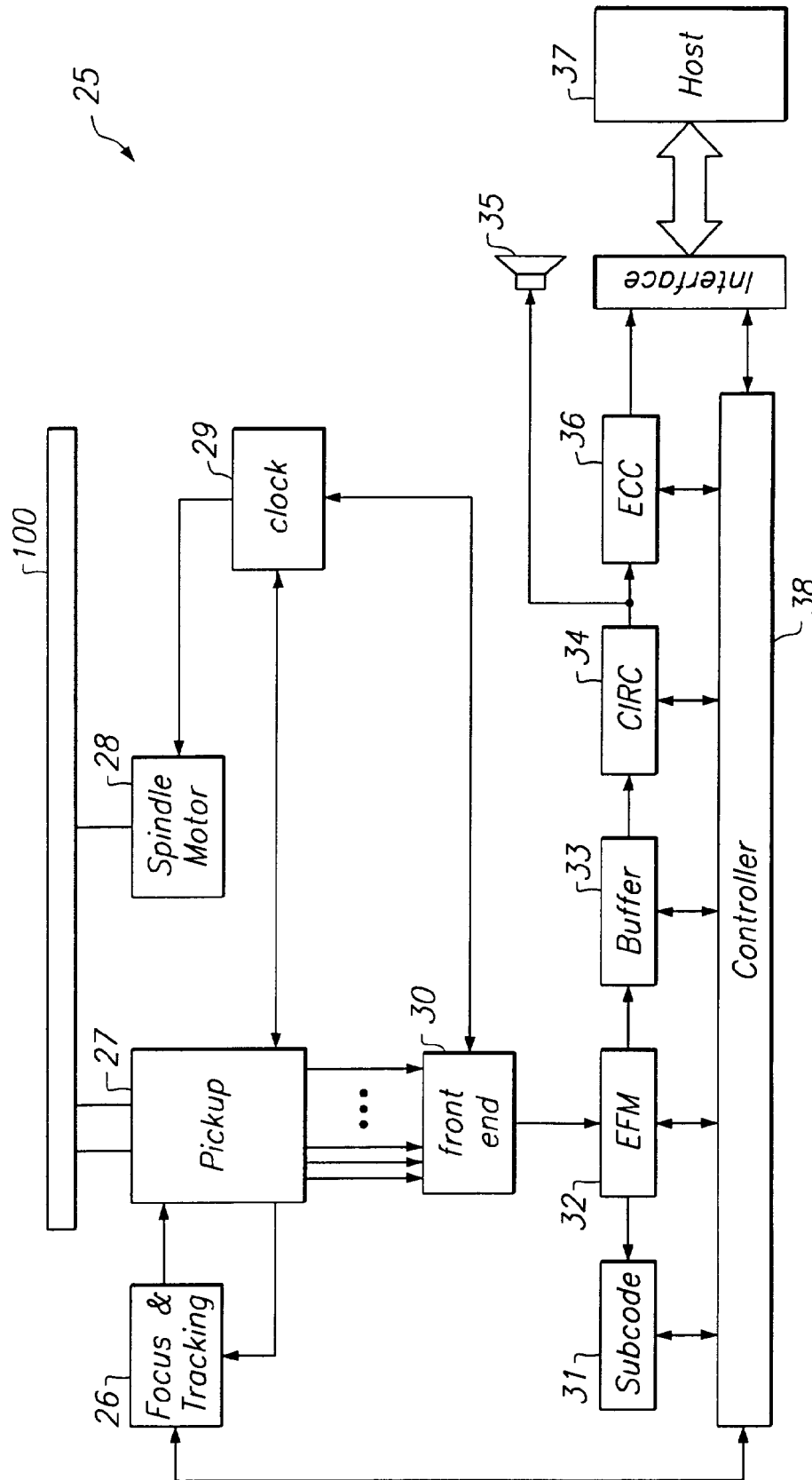


FIG. 2

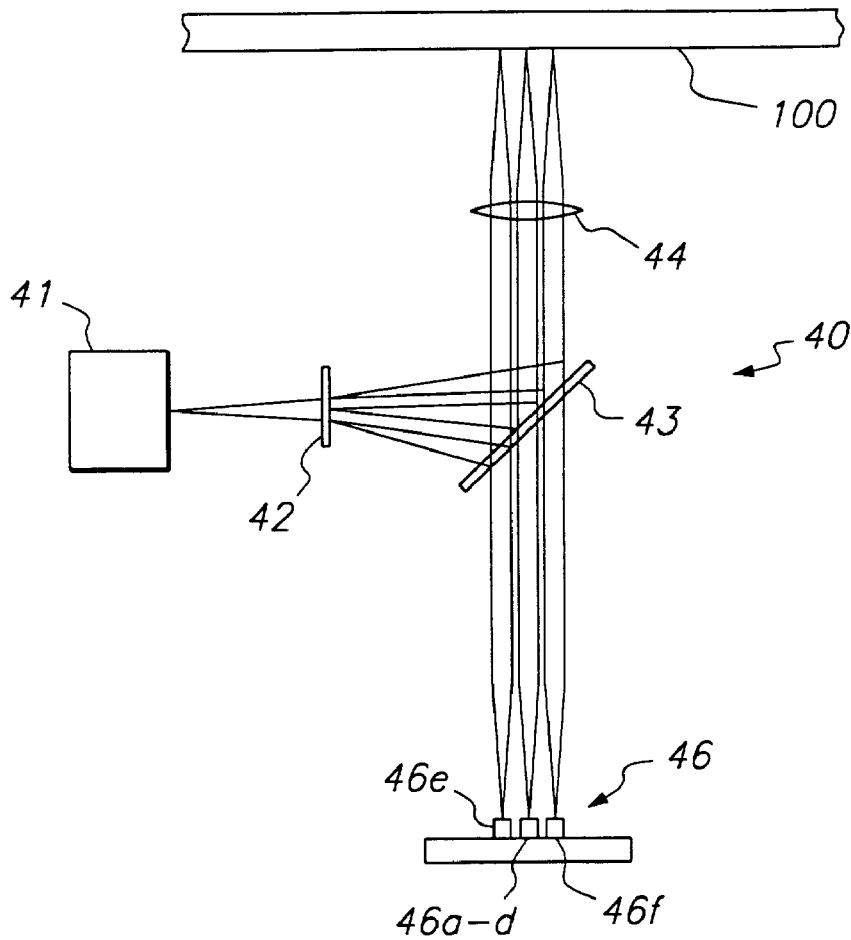


FIG. 3

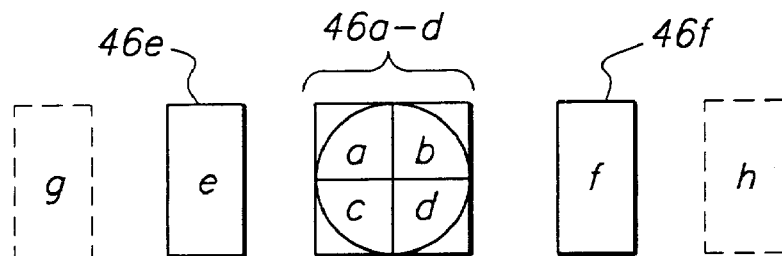


FIG. 4

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