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**Tomlinson**

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(54) **METHOD OF CONTROLLING A DYNAMIC GAIN CONTROLLER**

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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 152 days.

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(22) Filed: **Mar. 15, 2001**

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(51) **Int. Cl.<sup>7</sup>** ..... **G02B 6/34**

(52) **U.S. Cl.** ..... **702/85; 385/37; 359/237; 359/124**

(58) **Field of Search** ..... 702/85, 40; 250/334, 250/339.02, 352; 385/37, 370.06, 370.08, 370.09, 252.1, 15, 24, 31, 39, 45; 349/115, 176, 74, 78, 98; 356/328; 359/124, 127, 237, 259

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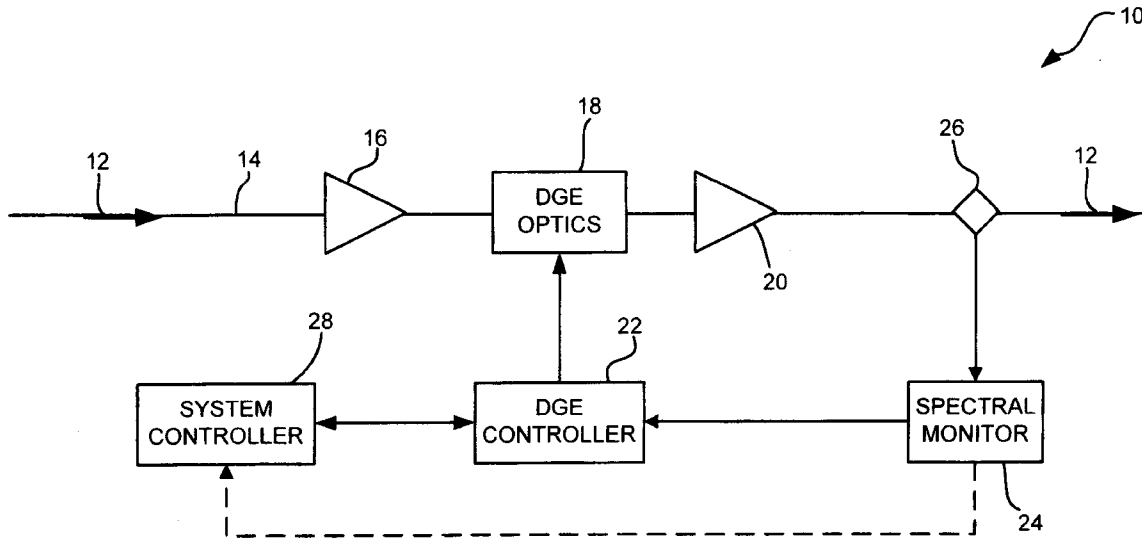
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(57)

**ABSTRACT**

A method of controlling a response function of a pixelated dynamic gain controller involving structuring the problem as a set of linear equations that are used to efficiently and accurately determine an initial set of pixel settings and further can be iterated to determine optimum pixel settings for a desired response function. In particular, the gain controller is comprised of an array of individually controllable pixels such as an array of liquid crystals. Adjusting drive conditions to each pixel controls the relative transmission of a narrow band of wavelengths through each pixel. The target response function is achieved by structuring the control conditions as a set of linear equations with which it is possible to accurately determine an initial set of pixel settings. The settings can be iterated to determine an optimum setting for a desired response function or change in response function. Additionally, compensating pixels at the edges of the array are used to compensate for edge effects.

**19 Claims, 9 Drawing Sheets**



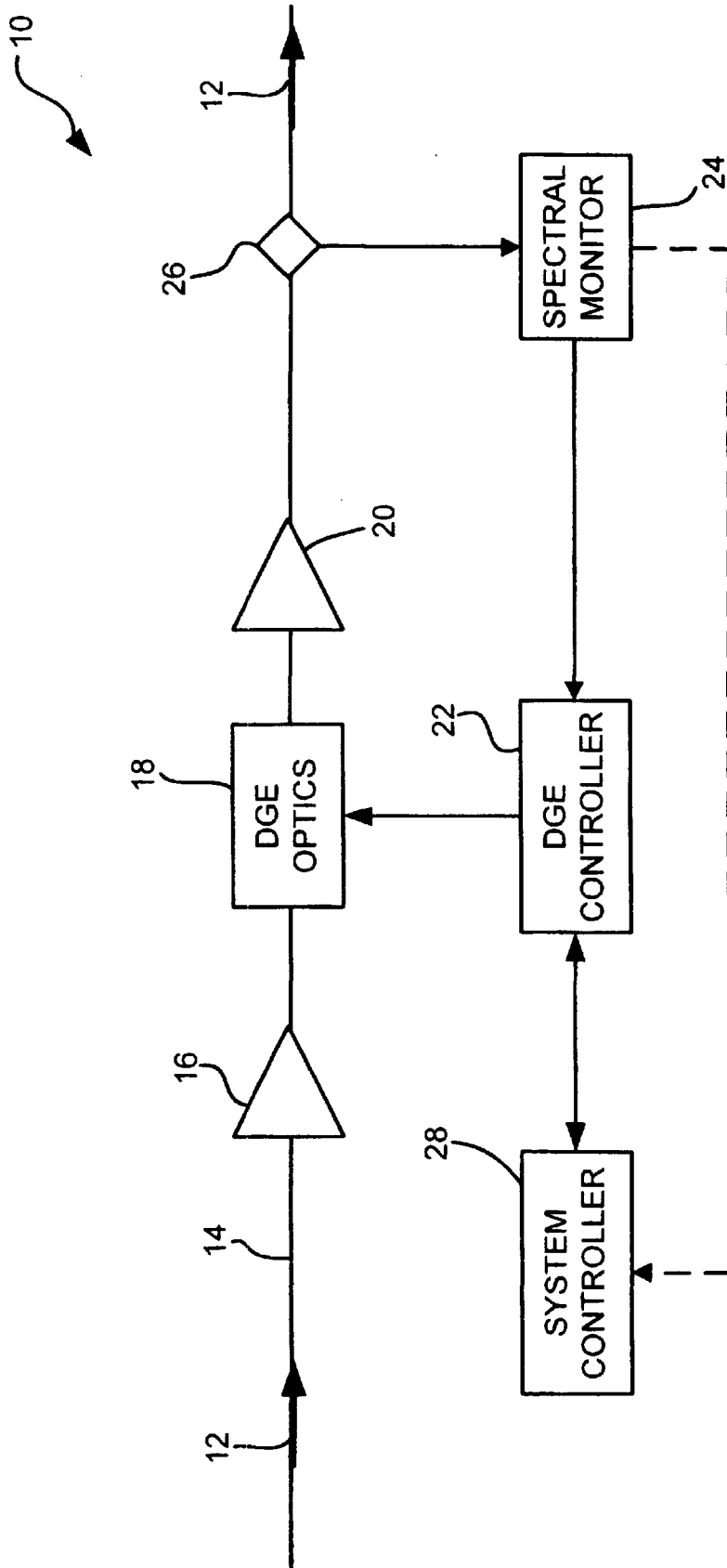


FIG. 1

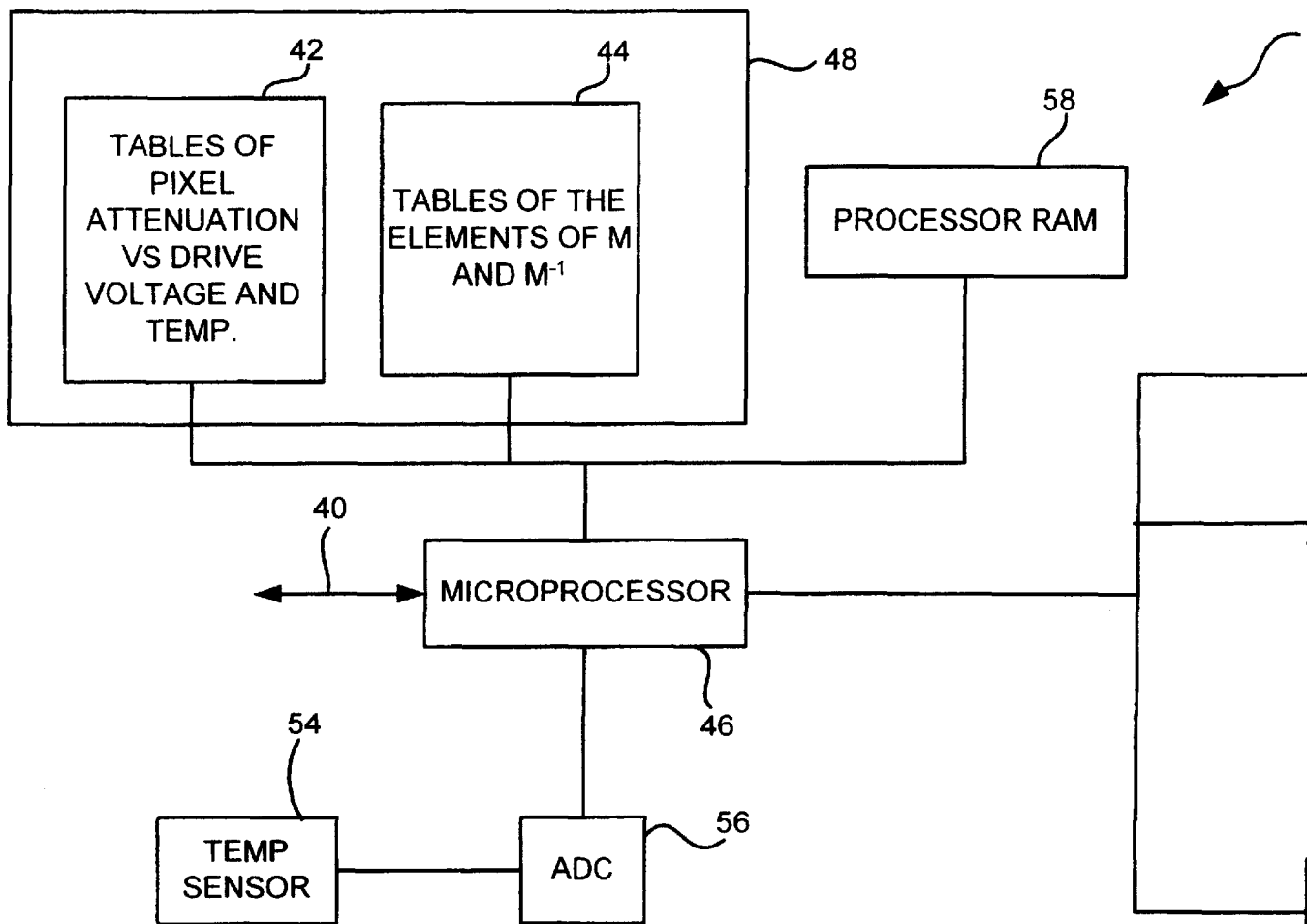
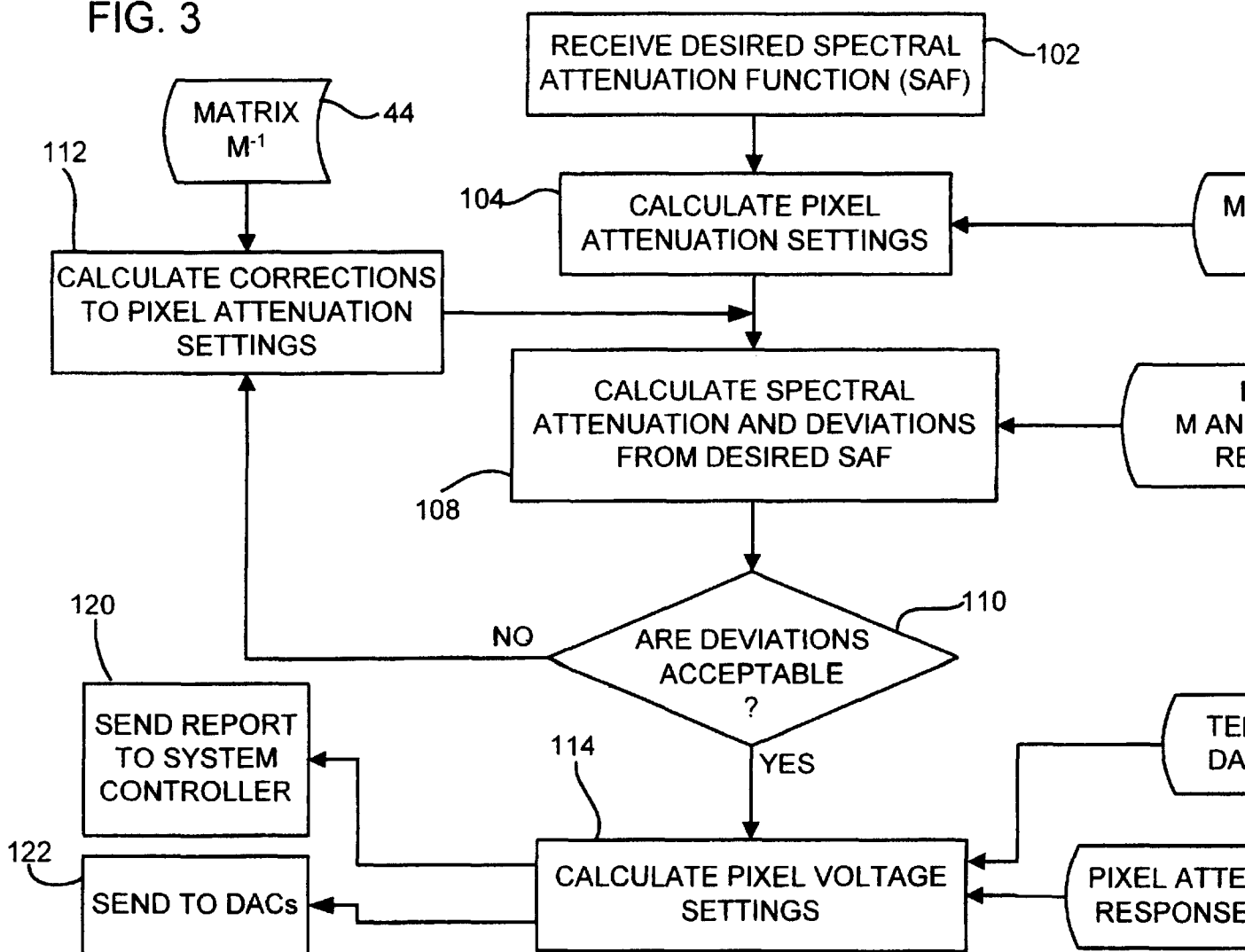


FIG. 2

FIG. 3



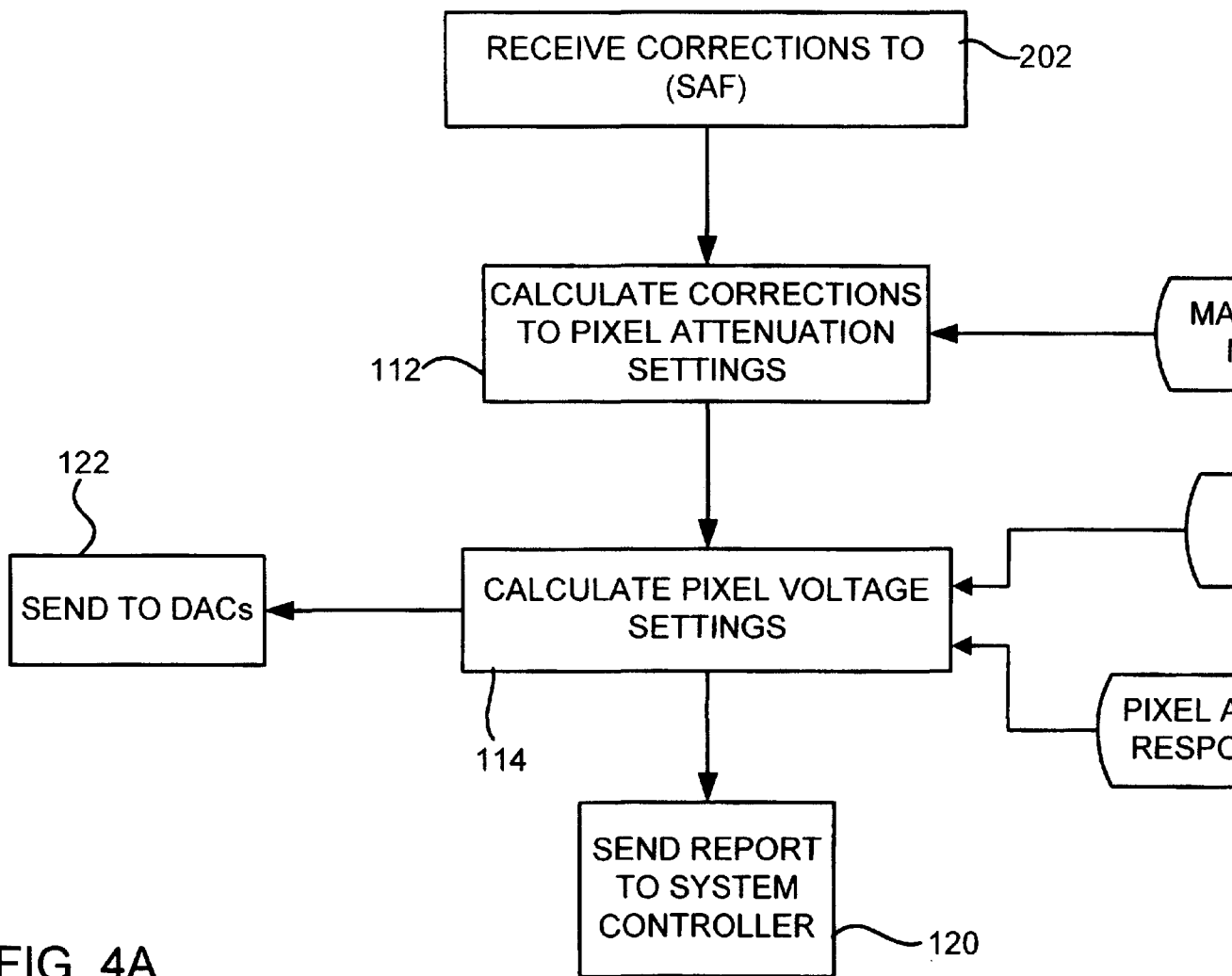


FIG. 4A

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