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Fallisgaard et al.

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[54] CRYSTAL OSCILLATOR PROGRAMMABLE WITH FREQUENCY-DEFINING PARAMETERS

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H03L 7/18

[52] U.S. Cl. **331/18**; 331/16; 331/158;
331/179

[58] Field of Search 331/16, 18, 25,
331/116 R, 116 FE, 158, 179; 327/105,
156-159; 375/376; 455/260

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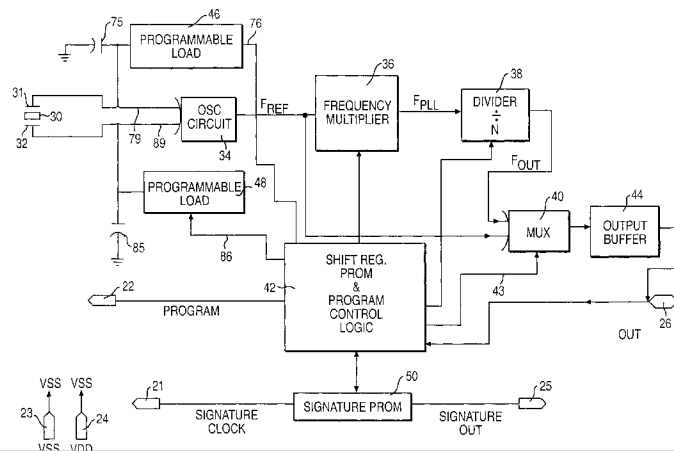
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[57] ABSTRACT

A programmable crystal oscillator is provided having a memory for storing frequency-defining parameters. Typically, one of these parameters is used to program an adjustable capacitive load circuit coupled to a crystal to thereby adjust the crystal source frequency. Additional parameters are used to program the output frequency of a phase locked loop circuit coupled to receive the adjusted source frequency. A further parameter can also be used to divide the output frequency of the phase locked loop circuit to supply a specified output frequency. The oscillators can be manufactured as generic programmable crystal oscillators without regard for output frequency and then quickly programmed to produce customer-specified output frequencies with a high degree of accuracy.

33 Claims, 4 Drawing Sheets



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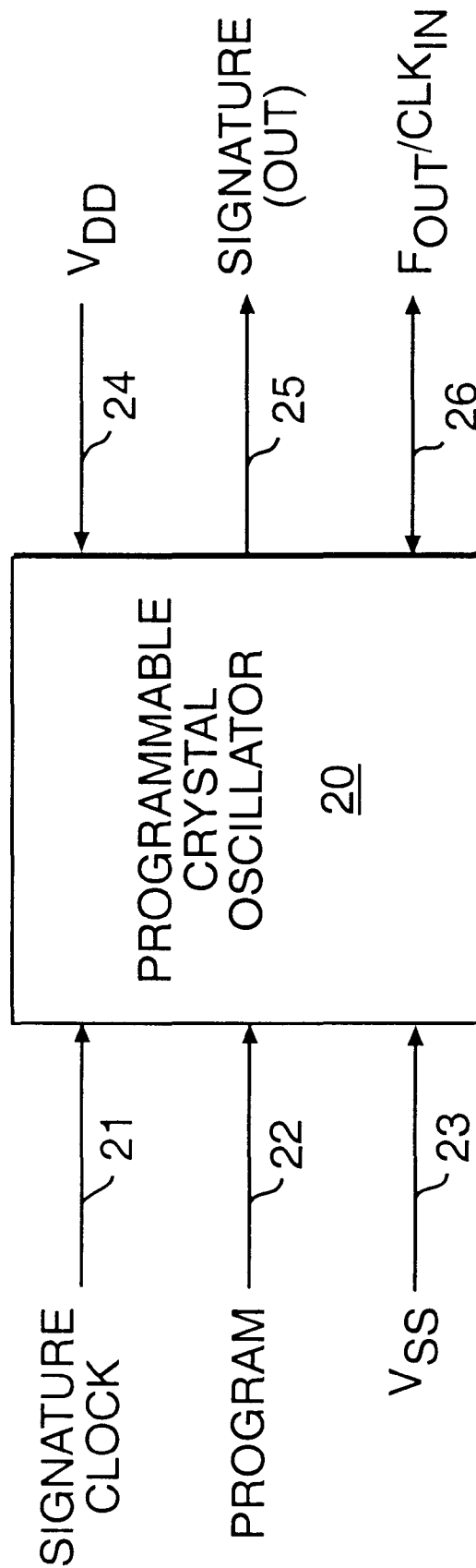


FIG. 1

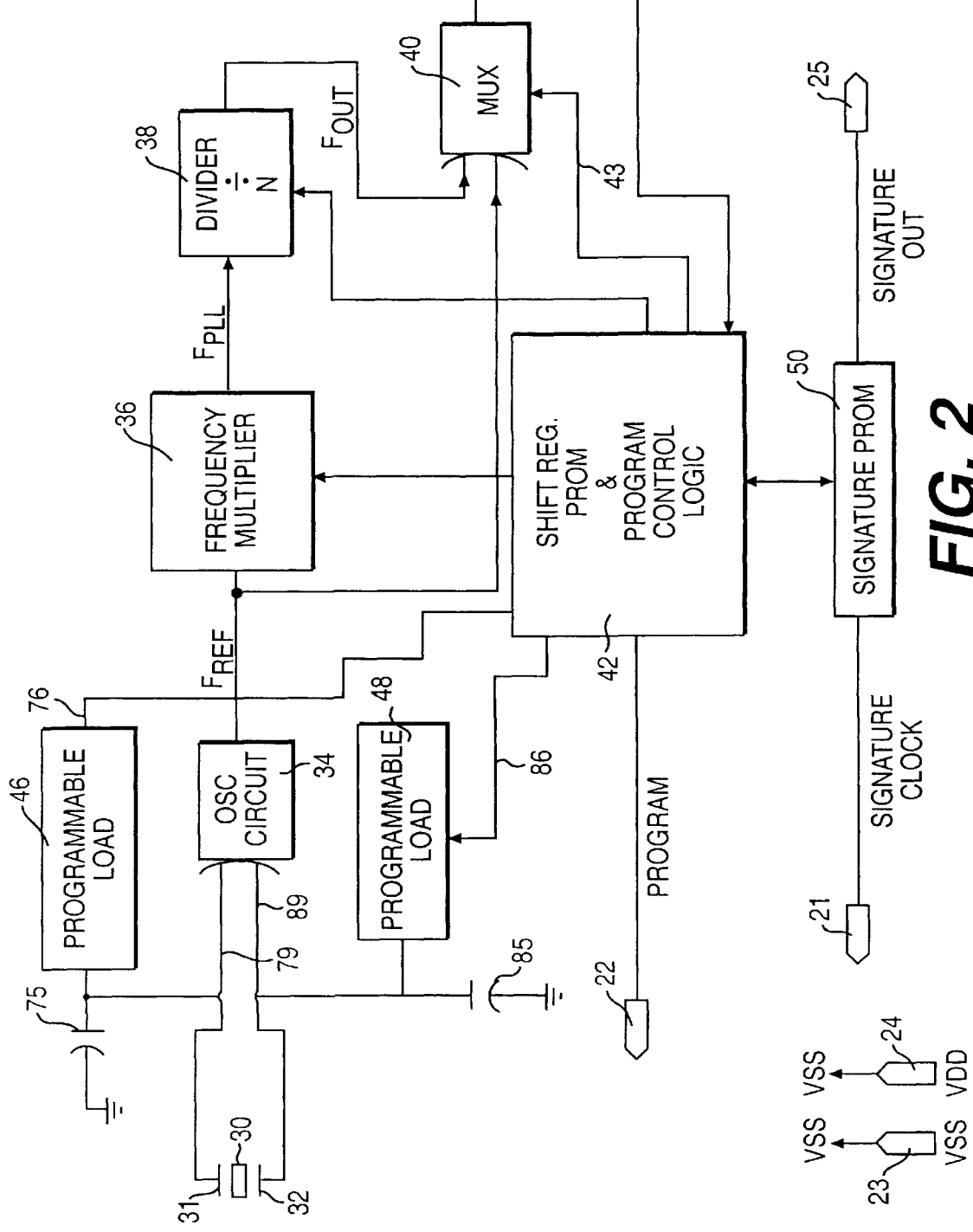


FIG. 2

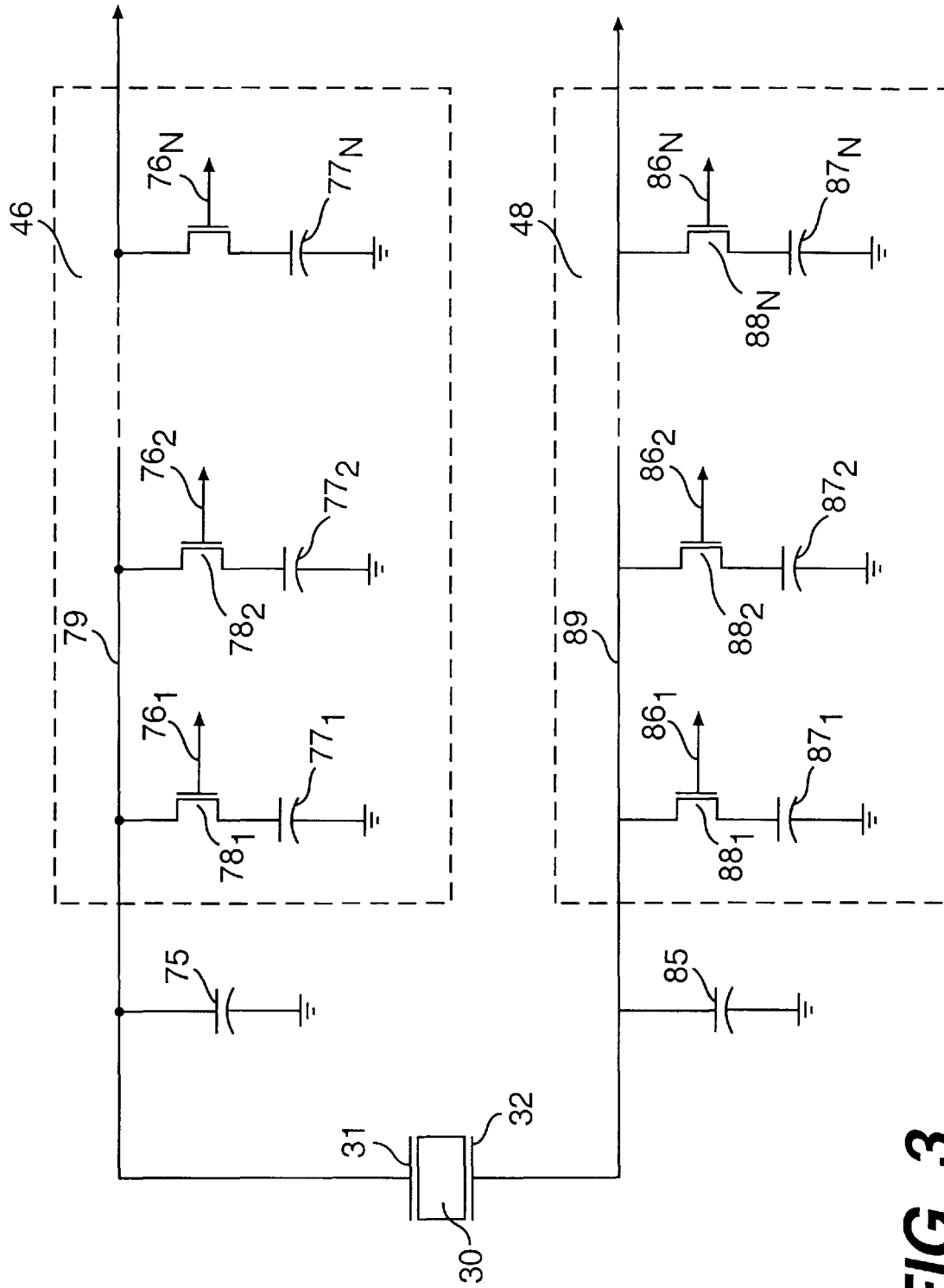


FIG. 3

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