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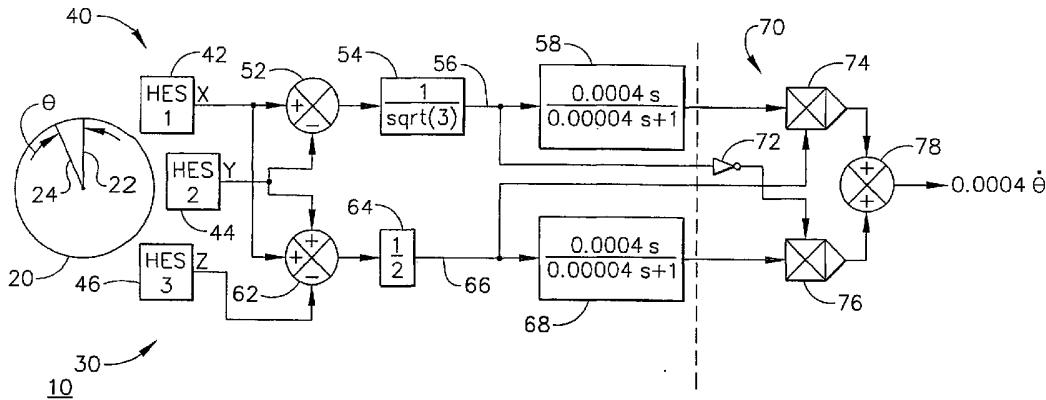
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(54) Title: METHOD AND APPARATUS FOR FINE RESOLUTION BRUSHLESS MOTOR CONTROL



(57) Abstract: A motor controller (30) includes three analog Hall-effect sensors (42, 44, 46) for forming continuous-time signals proportional to the sine and cosine of the position of the rotor (24) of a motor (20). The sine and cosine signals are differentiated to obtain signals proportional to the 4 rotor rate times the sine and cosine values. These integrated values are then multiplied by the cosine and inverse of the sine values, respectively, to obtain values equal to the rotor rate times 6 the square of the cosine and the rotor rate times the square of the sine. These latter two values are summed to obtain an output signal proportional to the rotor rate based on the trigonometric identity $\sin^2(x) + \cos^2(x) = 1$. Since the motor controller (30) derives a high-resolution value for the rotor rate, it may be used for fine resolution control of brushless motors and the like.

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHEDMinimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

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Patent family members are listed in annex.

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