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(54) **ROTATION ANGLE DETECTOR, ROTATING ELECTRICAL MACHINE, AND ELEVATOR HOISTING MACHINE**

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See application file for complete search history.

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(57) **ABSTRACT**

An excitation winding is wound around each tooth of a detecting stator core. First output winding and second output winding are wound around mutually different teeth while avoiding winding of the output windings with the same phase around two teeth adjacent to each other in a circumferential direction. When the number of pole pairs of the excitation winding is M that is an integer equal to or greater than 1 and the number of salient poles of a detecting rotor is N that is an integer equal to or greater than 1, a spatial distribution of the number of turns in each of the first and second output winding is obtained by a function represented by a sine wave of a spatial order |M±N|. An error spatial order δ represented by |M−|M±N|| and an error spatial order ε represented by |δ−M| are values other than 1 and 2.

16 Claims, 22 Drawing Sheets