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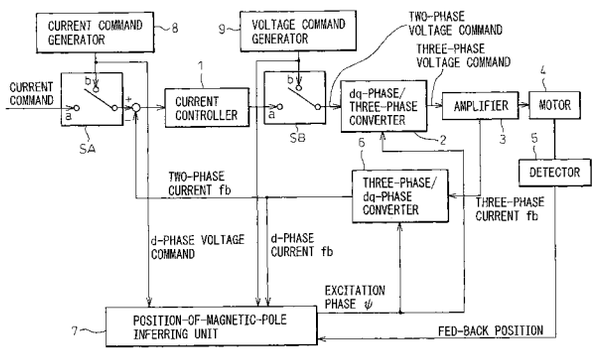
(54) **Position-of-magnetic-pole detecting device**

(57) A position-of-magnetic-pole detecting device includes first and second units for inferring a position of a magnetic pole. The first unit applies a current command while changing an excitation phase, infers a domain, where the position of a magnetic pole lies and which has the width thereof determined with a range of electrical angles, from the direction of rotation in which a motor rotates, and the excitation phase, and reduces the domain so as to infer the position of a magnetic pole. The second unit infers the position of a magnetic pole from a fed-back current returned responsively to a voltage command applied with the excitation phase sequentially changed. Thereafter, a voltage high enough to cause magnetic saturation is applied in order to determine the orientation of a magnetic pole, whereby the position of a magnetic pole is inferred. Although the first unit is selected, if the motor does not move due to friction or the like, the second unit is used to infer the position of a magnetic pole. If the position of a magnetic pole inferred by the second unit differs from one value to another, the first unit is used to infer the position of a magnetic pole.

FIG.1



EP 1 533 891 A8