

CEILING FAN

ABSTRACT

5 Control circuit (4) includes AC/DC conversion circuit (9) that converts
AC voltage to DC voltage; and inverter circuit (11) which is composed of an
upper stage and a lower stage and configured such that three arms, each of
which includes two switching elements that perform opposing ON/OFF
operation and are connected in series with DC voltage, are connected in three-
10 phase bridge, inverter circuit (11) driving the motor when fed with A/D
converted voltage by a three-phase PWM method. In addition, control circuit
(4) includes: a shunt resistor (14) inserted for each of phases of the inverter
circuit (11), between the lower stage and a negative potential side of the phase;
amplifier (15) that amplifies inter-terminal voltage of shunt resistors (14); and
15 current detector (16) that detects, from an output of amplifier (15), a current
value of each phase flowing in the motor. Further, control circuit (4) includes:
rotation detector (17) that calculates a rotating speed and a position of the
motor based on the current detected by current detector (16); and air volume
calculator (18) that calculates a distance from the blade to the ceiling and
20 compares a target air volume with a current output air volume. Still further,
control circuit (4) includes speed controller (22) that, based on a comparison
result of air volume calculator (18), controls the rotating speed of the motor by
outputting a duty to inverter circuit (11) so that air volumes are substantially
uniform.

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FIG. 1