

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte HARALD KLODE

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Appeal No. 2001-1309  
Application No. 08/964,780

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ON BRIEF

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Before KRASS, JERRY SMITH and DIXON, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 5-7 and 11-14.

The invention is concerned with programmable brushes for DC motors. More particularly, in order to compensate for the normal wear, and subsequent out-of-balance of parts, which produce more vibration at high speeds, the invention causes a motor to decrease its speed as wear occurs. This is accomplished by establishing three periods, initial, middle and final periods, for a motor lifetime. Then motor brushes

are made to deliver current to a rotor of that motor, such that motor speed is caused to remain substantially constant during the initial period, to progressively decrease during the middle period, and to remain substantially constant during the final period.

Representative independent claim 5 is reproduced as follows:

5. In an automotive vehicle, the improvement comprising:
  - a) a drive train in which wear causes play to arise;
  - b) a motor for driving the drive train, and having a lifetime which is definable into three periods: initial, middle, and final;
  - c) brush means for delivering current to a rotor of the motor, and which causes motor speed to
    - i) remain substantially constant during the initial period;
    - ii) progressively decrease during the middle period; and
    - iii) remain substantially constant during the final period.

The examiner relies on the following references:

Onodera	5,446,324	Aug. 29, 1995
Suriano	5,852,352	Dec. 22, 1998 (filed Apr. 11, 1997)

Additionally, the examiner relies on “common knowledge in the art.”

Claims 5-7 and 11-14 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner offers Suriano with regard to claims 5 and 11, further relying on “common knowledge in the art” with regard to claims 6, 7 and 13. With regard to

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claims 12 and 14, the examiner relies on either Suriano or Suriano and “common knowledge in the art” in view of Onodera.

Reference is made to the briefs and answer for the respective positions of appellant and the examiner.

### OPINION

With regard to claims 5 and 11, it is the examiner’s position that Suriano discloses the claimed subject matter but for the brush having a constant initial speed followed by a decrease in speed and a constant speed following the decrease in speed.

The examiner points to Figure 16C of Suriano and contends that this figure suggests that the motor would operate at a specific speed (based on the contact point P), then decrease in speed (based on point P5). The examiner further alleges that this figure suggests that the speed will remain constant after the point P2 has reached the right most point on the commutator. Thus, the examiner concludes that it would have been obvious to construct the motor of Suriano having an initial speed, followed by a speed decrease and a final remaining constant speed “because Suriano suggests that the speed of the motor is controlled by the centroid of the brush and commutator in a DC motor and because Figure 16C suggests that the speed can be controlled for a constant speed, a decreasing speed, and a constant speed.”

We will not sustain the rejection of claims 5 and 11 since, in our view, the examiner has not established a prima facie case of obviousness.

Suriano counteracts the tendency of increasing motor speed as motor brushes become seated by providing a brush geometry which causes the effective angular position of a brush to change during the seating process. That is, the effective contact angle of the brush changes. The change is in a direction which tends to reduce speed.

Appellant points to Suriano's Figure 15 to urge that the reference depicts only two regions of speed over time, separated by a peak occurring around 40% of brush seating. This argument appears to be in agreement with Suriano's disclosure. Even Suriano's claims are directed to increasing motor speed during initial stages of brush seating, wherein motor speed peaks at about 40% of brush seating, and then decreasing the motor speed after peaking.

The instant claims, as argued by appellant at pages 9-10 of the principal brief, are directed to a specific sequence of speed behavior, viz., constant, then decreasing, then constant. Thus, there is a decreasing period between two constant periods during a motor's lifetime. Moreover, that decreasing period is a "progressively" decreasing period." Suriano, on the other hand, discloses an increasing period followed by a decreasing period. Thus, the claimed sequence of a constant speed-progressively decreasing speed-constant speed is not disclosed or suggested by Suriano.

The examiner counters with the argument that it is Suriano's Figure 16C on which the examiner relies. The examiner alleges that this figure suggests that the

motor would operate at a specific speed, based on point P, then decrease in speed, based on point P5, and, finally, remain at a constant speed at point P2. However, we do not view Suriano as depicting such a speed behavior, appellant vigorously contests such an interpretation at pages 6-18 of the reply brief, presenting a detailed analysis as to Suriano's operation and, most importantly, the examiner fails to provide any cogent reasoning as to why Figure 16C may be interpreted in the manner alleged by the examiner.

In view of Suriano's failure to suggest the claimed motor speed sequence, we will not sustain the examiner's rejection of claims 5 and 11 under 35 U.S.C. § 103.

With regard to claims 6, 7 and 13, the examiner adds "common knowledge in the art" to Suriano in rejecting these claims under 35 U.S.C. § 103. The examiner alleges that Suriano teaches every aspect of the claimed invention except for "the brush remaining at a constant speed for the first 100 hours of operation, steadily decreasing over 100 hours and remaining at a constant speed after 200 hours of operation" [answer-page 4]. We would hasten to point out that it is the "motor speed," and not the "brush," which is claimed as exhibiting this speed behavior.

In any event, the examiner states that although Suriano does not specify wear time for the brush, it would have been obvious "to provide 100 hours at the initial portion of the brush wear with 100 hours of steadily decreasing speed because Suriano

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teaches the shape of the brush controls the motor speed [sic] and because discovering the optimum or workable range involves only routine skill in the art” [answer-page 4].

For the reasons, supra, Suriano does not teach a motor speed being substantially constant during an initial period of time and then “progressively decrease” during a second period of time. Rather, Suriano appears to teach first an increase in speed during an initial period of time and then a decrease during a second period of time. Accordingly, we do not need to reach the question of whether it would have been obvious to provide 100 hours for the initial period and 100 hours for the second period.

Further, while it may be, generally speaking, that the discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of an artisan; In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), the examiner has not shown that the claimed time periods of 100 hours comprise discovery of optimum values of a “result effective variable in a known process.”

Accordingly, we will not sustain the rejection of claims 6, 7 and 13 under 35 U.S.C. § 103.

Finally, the examiner rejected claims 12 and 14 under 35 U.S.C. § 103 by relying on either one of the above grounds in addition to Onodera, Onodera being employed for a suggestion of a motor being used to adjust a seat in a vehicle.

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To whatever extent Onodera suggests employing a motor to adjust a seat in an automobile, Onodera clearly does not provide for the deficiencies noted supra with regard to the claimed motor speed sequence, which each of dependent claims 12 and 14 includes. Accordingly, we will not sustain the rejection of claims 12 and 14 under 35 U.S.C. § 103.

The examiner's decision rejecting claims 5-7 and 11-14 under 35 U.S.C. § 103 is reversed.

REVERSED

ERROL A. KRASS	)	
Administrative Patent Judge	)	
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	)	
	)	
JERRY SMITH	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS
	)	AND
	)	INTERFERENCES
	)	
	)	
JOSEPH L. DIXON	)	
Administrative Patent Judge	)	

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