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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BRUCE JEROME SOLBERG and
DAVID KENT MATTHEIS

Appeal 2010-009209
Application 10/461,321
Technology Center 3600

Before: JENNIFER D. BAHR, LINDA E. HORNER, and
JOSEPH A. FISCHETTI, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Bruce Jerome Solberg and David Kent Mattheis (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1-18. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

The Claimed Subject Matter

Claim 1, reproduced below, is illustrative of the claimed subject matter.

1. A method of unwinding a roll of web material, the method comprising steps of:
 - a) rotating the roll to unwind the web material at a web material speed,
 - b) routing the web material around a perforated air conveyance, whereby the machine direction of motion of the web material is altered,
 - c) measuring a web-tension analog value for the web material according to a force acting upon a tension-sensing element said tension-sensing element being responsive to a boundary layer of air proximate to said web material as said web material passes proximate to said tension sensing element,
 - d) determining a web velocity analog value,
 - e) determining an instantaneous integral gain according to the web velocity analog value,
 - f) adjusting the speed of the web according to the instantaneous integral gain, and,
 - g) routing the web material to a downstream process.

Rejections

Appellants request our review of the following rejections:

- (1) claims 1-8 under 35 U.S.C. § 103(a) as unpatentable over McGary (US 6,328,852 B1, iss. Dec. 11, 2001), Rantala (US 5,052,233, iss. Oct. 1, 1991), and Appellants' Admitted Prior

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Art (AAPA), described in Appellants' Specification (p. 7, ll. 1-27; and

- (2) claims 1-18 under 35 U.S.C. § 103(a) as unpatentable over McGary, Rantala, and Rogers (US 5,709,352, iss. Jan. 20, 1998).

OPINION

Independent claims 1 and 8 are directed to a method of unwinding a roll of web material and require, in relevant part, steps of determining a web velocity analog value, determining an instantaneous integral gain according to the web velocity analog value, and adjusting the speed of the web according to the instantaneous integral gain. Independent claim 9 is directed to an apparatus for unwinding a roll of web material comprising, in relevant part, a data processing system adapted to determine a web velocity analog value and an instantaneous integral gain according to the web velocity analog value, and a controller adapted to adjust the speed of the web material according to the instantaneous integral gain.

Obviousness based on McGary, Rantala, and AAPA

Appellants argue, and we agree, that McGary and Rantala do not disclose or suggest determining a web velocity analog value, utilizing the web velocity analog value to determine an instantaneous integral gain, and adjusting the speed of the web according to the instantaneous integral gain. *See* App. Br. 5. Indeed, the Examiner implicitly acknowledges this deficiency and relies on AAPA in an attempt to remedy it. *See* Ans. 10-11 (admonishing Appellants for attacking McGary and Rantala and “forgetting that the admitted prior art was used in the rejection and not just McGary and Rantala”).

The Examiner finds that Appellants' Specification, at page 7, in lines 1-27, admits that "the instantaneous integral [gain] of the drive controller 600 measuring and adjusting the speed of the web is known in the art." Ans. 5. The Examiner determines it would have been obvious to replace the airfoil of McGary with the airfoil of Rantala and the known drive controller described in AAPA, "to show or explain how the material is being tensioned and measured using a sensor to adjust the speed of the web material." *Id.*

Appellants' Specification describes an embodiment of the invention in which the instantaneous integral gain of the drive controller is determined according to a velocity analog value of the web. Spec., p. 7, ll. 17-18. We find this statement to be a description of the present invention, not an admission of prior art. However, Appellants' Specification admits that a drive controller suitable for practicing this embodiment of Appellants' invention "that uses the integral of a value derived from the error signal to derive the controller output correction" was known and available at the time of Appellants' invention. Spec., p. 7, ll. 22-26. Thus, the admission in Appellants' Specification establishes that a drive controller accommodating integral control with an instantaneous (i.e., adjustable) integral gain existed in the prior art at the time of Appellants' invention. We find no admission in Appellants' Specification directed to a prior art methodology or algorithm for determining the instantaneous integral gain of the known controller.

Even accepting that it would have been obvious to a person of ordinary skill in the art to employ the known integral controller described in AAPA as the drive controller in the method and apparatus of McGary and Rantala, the analysis supporting the obviousness rejection lacks findings and/or technical reasoning establishing an apparent reason why a person of ordinary skill in the art would have been prompted to determine a web

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velocity analog value and to determine the instantaneous integral gain of the controller according to the web velocity analog value. Thus, the Examiner's findings and analysis are not sufficient to establish that the subject matter of claims 1 and 8 would have been obvious. We therefore do not sustain the rejection of claims 1 and 8 and of claims 2-7, which depend from claim 1, as unpatentable over McGary, Rantala, and AAPA.

Obviousness based on McGary, Rantala, and Rogers

In contesting the rejection of claims 1-18 as unpatentable over McGary, Rantala, and Rogers, Appellants reiterate their argument that McGary and Rantala do not disclose or suggest determining a web velocity analog value, utilizing the web velocity analog value to determine an instantaneous integral gain, and adjusting web speed according to the instantaneous integral gain. App. Br. 7. Appellants add that the Examiner's application of Rogers does not remedy that deficiency. *Id.* According to Appellants, the Examiner has not provided any articulated reason with some rational underpinning to support the conclusion that the subject matter of claims 1, 8, and 9 would have been obvious. *Id.*

In articulating the rejection based on McGary, Rantala, and Rogers, the Examiner does not rely on Rogers for any teaching directed to determining a web velocity analog value and utilizing the web velocity analog value to determine an instantaneous integral gain. The Examiner finds that Rantala discloses that

during the operation the speed of the web material can be adjusted (i.e., help of a movable gauging bar, which can [be] optimized for different web speeds and tensions which inherently determines an instantaneous integral gain since it uses the analog value to adjust the speed of the web along the controlled segment of the web and every

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machine has a certain maximum speed, see column 4, lines 31-33) and velocity is determined through the speed, acceleration ($a=V \, dv/dt$), see column 3, lines 38-45, and abstract, and figures 2-4.

Ans. 8; *see also id.* at 11.

The Examiner appears to be relying on the theory of inherency to establish that Rantala discloses determining an instantaneous integral gain. In essence, the Examiner finds that Rantala somehow determines an instantaneous integral gain in adjusting web speed. However, the Examiner does not coherently explain the basis for this finding.

Rantala measures web tension and adjusts rotation speed of the rolls according to the measured tension. Col. 1, ll. 20-23. Rantala measures web tension by measuring the pressure introduced by the air cushion between the web and the gauging bar, which is linearly proportional to the pressure imposed on the roll by the tension of the web. Col. 3, ll. 7-10. Rantala then converts that measurement signal from voltage to current and then converts the analog current signal into digital format for use in the computer system. Col. 3, ll. 29-48. We appreciate that speed is the integration of acceleration over time. However, it is not apparent, and the Examiner has not adequately explained, why the analog voltage or current signal from the pressure transducer is an “instantaneous integral gain.”

Moreover, even accepting that the analog signal from Rantala’s pressure transducer is an instantaneous integral gain, the Examiner does not point to any disclosure in Rantala of determining a web velocity analog value and determining the analog voltage or current signal according to that web velocity analog value. Rather, Rantala determines the analog voltage or current signal by measuring the pressure introduced by the air cushion between the web and the gauging bar.

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For the above reasons, the Examiner's rejection lacks the necessary findings and analysis to support the conclusion that the subject matter of claims 1, 8, and 9, including determining a web velocity analog value, determining an instantaneous integral gain according to the web velocity analog value, and adjusting web speed according to the instantaneous integral gain, would have been obvious. Thus, we do not sustain the Examiner's rejection of claims 1-18 as unpatentable over McGary, Rantala, and Rogers.

DECISION

The Examiner's decision rejecting claims 1-18 is reversed.

REVERSED

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