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SUGHRUE MION, PLLC
2000 PENNSYLVANIA AVENUE, N.W.
SUITE 900
WASHINGTON, DC 20006

EXAMINER	
CHEN, KEATH T	

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOHAN MATHIASSON, MARTIN KESSINGER, FALK KRAUSE, TIMO AHLGREN, and STEFAN STEINBERG

Appeal 2018-006335
Application 14/376,925
Technology Center 1700

Before N. WHITNEY WILSON, CHRISTOPHER C. KENNEDY, and MERRELL C. CASHION, JR., *Administrative Patent Judges*.

CASHION, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from a Final Action rejecting claims 1–11. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

[1] BEIJING APOLLO DING RONG SOLAR TECHNOLOGY CO. LTD, is the Applicant/Appellant and is also identified as the real party in interest. App. Br. 2.

The invention is directed to a vacuum deposition source having a heating system where an elastic carbon material is used to provide an elastic connection between a power supply and a heating element of the vacuum deposition source. Spec. 1, 3. According to the Specification, prior art vacuum deposition systems relied on a heating element in the form of a conductive wire or some other rigid lead to supply electrical current from a power source element. *Id*. at 1. This arrangement leads to problems arising from a temperature difference from the rigid contact between the heating element and the power source element where the evaporated source material may condense on the contact or the power source element if the contact itself is colder than the heating element or the contact becomes unreliable due to thermal expansion if the contact is kept at a high temperature, which would lead to arching. *Id*. Appellant addresses this problem by using an elastic spring made of carbon material to provide a mechanical connection between a connection member and a power supply element that keeps the pressure of the electrical contact even at high temperature. *Id*. at 3. Claim 1 illustrates the subject matter claimed and is reproduced below:

> 1. A vacuum deposition source heating system, mountable to a vacuum deposition system and comprising:
>
> a heating element designed for heating a deposition source,
>
> a power supply element, electrically connected to the heating element for providing electrical power to the heating element;
>
> a connection member, electrically connecting the power supply element to the heating element,

> wherein the connection member comprises a spring element made of an elastic carbon material arranged and adapted such that the power supply element is mechanically mounted to the connection member in an elastic manner to form an electrical connection compensating for heat expansion effects in a temperature range from ambient temperature to 700 to 1500 degrees centigrade.

Appellant requests review of the following rejections maintained by the Examiner:[2]

I. Claim 1 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Priddy 878 (US 2010/0031878 A1, published Feb. 11, 2010) and Burham 674 (US 3,395,674, issued Aug. 6, 1968).

II. Claims 2, 4–7, and 11 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Priddy 878, Burham 674, and Nakagawa (US 5,503,783, issued Apr. 2, 1996).

III. Claims 3–7 and 11 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Priddy 878, Burham 674, and Gestermann (US 2003/0047446 A1, published Mar. 13, 2003).

IV. Claims 8–10 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Priddy 878, Burham 674, and Sirtl (US 3,160,476, issued Dec. 8, 1964 and referred to by the Examiner as Erhard).

Appellant relies on the same line of arguments to address all of the claims on appeal. *See generally* App. Br. We select independent claim 1 as representative of the subject matter claimed and decide the appeal as to all grounds of rejection based on the arguments made by Appellant in support of patentability of claim 1.

[2] Appellant requested an oral hearing for this appeal on June 4, 2018, which was scheduled for September 12, 2019. Appellant subsequently elected to waive hearing attendance in a communication dated August 8, 2019. Accordingly, the appeal will be decided based on the briefs submitted by Appellant.

OPINION[3]

After review of the respective positions the Appellant provides in the Appeal and Reply Briefs and the Examiner provides in the Final Action and the Answer, we reverse the Examiner's prior art rejections of claims 1–11 under 35 U.S.C. § 103 essentially for the reasons presented by the Appellant. We add the following for emphasis.

The Examiner finds that Priddy discloses a vacuum deposition source heating system comprising an elastic spring to provide a mechanical connection between a connection member and a power supply element. Final Act. 2–4. The Examiner further finds that Priddy uses an insulative spring element 218 to apply pressure through conductive pressure pin 222 and washer 226 to ensure an electrical connection with the power strap (source) 198. Final Act. 4; Priddy Figure 15, ¶¶ 87, 91, 93. The Examiner then finds that Priddy does not disclose a spring element made of an elastic carbon material. Final Act. 4. The Examiner finds that Burham, directed to the field of an apparatus for vapor coating, discloses the use of resilient spring washers 54a that are compressed between the nuts 52a and the track rail 26a to pull the clamping arms 50a tightly against the clamping rods 42a. Final Act. 5; Burham Figure 6; col. 3, ll. 23–27. The Examiner determines that it would have been obvious to a person of ordinary skill in the art to substitute Burham's washer 54a for Priddy's washer 224 and/or washer 226 to clamp the power strap (source) 198 tightly, as taught by Burham. Final Act. 5.

[3] We limit our discussion to independent claim 1.

Appellant argues that the Examiner does not explain why one skilled in the art would replace the simple conductive washer 226 of Priddy with the more complex spring washer 54a of Burham. App. Br. 9.

We agree with Appellant that there is reversible error in the Examiner's determination of obviousness. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), quoted with approval in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

The Examiner asserts that Priddy's spring 218 is holding multiple components together but there is no guarantee of good electrical contact between every two neighboring components (between the contact washer 224 and the power strap 198 and between the power strap 198 and the conductive washer 226). Ans. 10. However, Priddy expressly discloses that spring 218 comprises a resilient material that can maintain its ability to apply consistent pressure to maintain the electrical connection throughout the operating temperature range of deposition source. Priddy ¶¶ 87, 91. Thus, the Examiner's assertion is unpersuasive because it is unsupported by objective evidence and is, at best, speculative in view of Priddy's disclosure. Moreover, the Examiner directs us to no portion of Burham that describes spring washer 54a as forming part of any electrical connection.

Therefore, the Examiner has not provided an adequate technical explanation of why one skilled in the art would have arrived at the claimed invention from the teachings of the cited art.

Accordingly, we reverse the Examiner's prior art rejections under 35 U.S.C. § 103 for the reasons the Appellant presents and we give above.

ORDER

The Examiner's prior art rejections of claims 1–11 under 35 U.S.C. § 103 are reversed.

REVERSED