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The time period for reply, if any, is set in the attached communication.

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* WILLIAM DICK, FRANCISCO J. ROMAY,  
and BENJAMIN Y.H. LIU

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Appeal 2015-001832  
Application 12/902,871  
Technology Center 2800

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Before JEFFREY T. SMITH, JULIA HEANEY, and  
AVELYN M. ROSS, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the January 10, 2014 Final Rejection of claims 1 and 4–10. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants' appealed invention relates to a method and an apparatus for conditioning the charge on aerosol particles for size distribution measurement by differential mobility spectrometry. (Spec. 1). Claim 1 is illustrative of the subject matter on appeal and reproduced from the Brief below:

1. An apparatus for exposing particles in a gas to ions in order to cause a charge on the particles to change, said apparatus comprising:

a chamber with an inlet for the gas to enter and an outlet for the gas to exit, said chamber being surrounded by an enclosure with a conductive wall, the conductive wall being held at a ground potential;

an electrode with an exposed sharp tip in contact with said gas in said chamber, said electrode being held at a different potential than the conductive wall with the exposed tip placed adjacent to a first section of the conductive wall and wherein an electric field is developed in the chamber, the electric field being characterized by a potential gradient having a lower electric field intensity in an area of the chamber having a second section of the conductive wall located away from and further from the exposed sharp tip than the first section of the conductive wall and a higher electric field intensity existing between the exposed tip and the first section of the conductive wall;

said inlet and outlet defining a gas flow path from said inlet to said outlet such that said gas flow path passes mainly through the lower electric field of intensity between said exposed electrode tip and the second section of the conductive wall; and

said electrode being connected to a source of voltage sufficient to cause a corona discharge to occur forming ions in said chamber.

The Examiner has maintained the following grounds of rejection:

- I. Claims 1 and 8 rejected under 35 U.S.C. § 102(b) as anticipated by Dick (US 2006/0093737 A1; published May 4, 2006).
- II. Claims 4–7, 9, and 10 rejected under 35 U.S.C. § 102(b) as anticipated by or in the alternative under 35 U.S.C. § 103(a) as obvious over Dick.

OPINION

*Rejection I*

We have reviewed each of Appellants' arguments for patentability. We will sustain the Examiner's rejection for essentially those reasons expressed in the Answer, including the Response to Argument section. We add the following:

Appellants argue the Examiner has not established that Dick teaches, expressly or inherently, a gas flow path directed mainly through the lower electric field of intensity as required by the claimed invention. (Br. 11–15). Appellants argue the Examiner erred “in reading the spatial relationship between the flow path and the electrode as depicted in Dick et al. as teaching or making obvious the claimed invention.” (Br. 10).

Appellants have argued patentability of the claimed invention based on the relative gas flow path through a lower electric field of intensity. Appellants are free to recite features of an apparatus either structurally or functionally. *See In re Swinehart*, 439 F.2d 210, 212 (CCPA 1971) (“[T]here is nothing intrinsically wrong with [defining something by what it does rather than what it is] in drafting patent claims.”). Yet, choosing to define an element functionally, i.e., by what it does, carries with it a risk. As our predecessor court stated in *Swinehart*, 439 F.2d at 213,

where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

*See also In re Hallman*, 655 F.2d 212, 215 (CCPA 1981); *In re Ludtke*, 441 F.2d 660, 663–64 (CCPA 1971). The Examiner has reasonably determined that Dick discloses the high electric field of intensity gas flow path through a lower electric field of intensity as required by claims 1 and 8. (Ans. 2–4; Final Act. 2–5). Dick, like the claimed invention, discloses a higher electric field intensity exists in the immediate vicinity of the tip of the electrode. (Final Act. 2; Dick ¶ 24; Spec. ¶ 26). Dick exhibits in the figures that the ions do not travel in the immediate vicinity of the electrode tip. The Examiner reasonably determined that the electric field occurring in areas of the chamber outside this immediate vicinity of the tip of the electrode necessarily had a lower electric field of intensity than the electric field occurring in the immediate vicinity of the electrode. The claimed subject matter does not describe how much difference is required to establish a “lower electric field of intensity.” Appellants have relied upon the arguments of their representatives to assert that Dick does not teach the gas flow path through a lower electric field of intensity as required by the claimed invention. Appellants have not directed us to evidence to refute the Examiner’s position. It is recognized that the reference’s named inventor Dick and one co-inventor, Lui, are also named as co-inventors of the present application. In cases such as this, Appellants are in the best position to provide evidence establishing that the electric field of intensity in the reference is not lower in the area of the gas flow pattern.

Accordingly, we affirm the Examiner’s decision to reject claims 1 and 8 for the reasons presented by the Examiner and given above.

*Rejection II*

After review of the respective positions provided by Appellants and the Examiner, we agree with Appellants that the Examiner did not establish that Dick describes or suggests the volume of the chamber as required by claims 4, 7, and 9; or the amplitude of the applied DC or AC voltage as required by claims 5, 6, and 10.

The Examiner in the statement of the rejection recognizes that Dick is silent as to the volume of the chamber (internal cavity), as required by claims 4, 7, and 9; or the amplitude of the applied DC or AC voltage as required by claims 5, 6, and 10; or the gas flow rate as required by claim 9. (Final Act. 5).

The Examiner in the Final Action does not provide an explanation supported by evidence establishing why Dick anticipates or renders obvious the claimed subject matter. The Examiner for the first time in the Answer states:

Even if the system disclosed in the published patent application does not inherently meet the parameters claimed in the instant application, the exact values of these parameters are not critical to the invention so they would have been matters of routine experimentation.

(Ans. 5).

Anticipation and obviousness rejections cannot be sustained by mere conclusory statements. On the present record, the belated, unsubstantiated, and conclusory statements are insufficient to establish unpatentability of claims 4–7, 9, and 10. The Examiner has failed to provide an adequate explanation as to what effect these parameters would have on the claimed

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invention such that their modification would have been a matter of routine experimentation.

For the foregoing reasons, we cannot sustain the Examiner's anticipation and obviousness rejections.

**ORDER**

The Examiner's anticipation rejection of claims 1 and 8 is affirmed. The Examiner's anticipation and obviousness rejections of claims 4–7, 9, and 10 are reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

**AFFIRMED-IN-PART**