

**The Director of the United States
Patent and Trademark Office**

The
United
States
of
America

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Michelle K. Lee

Director of the United States Patent and Trademark Office





US009534840B2

(12) **United States Patent**
Pahwa et al.

(10) **Patent No.:** **US 9,534,840 B2**
(45) **Date of Patent:** **Jan. 3, 2017**

(54) **METHOD AND DEVICE FOR MOISTURE DETERMINATION AND CONTROL**

(71) Applicant: **BRY AIR (ASIA) PVT. LTD., Delhi (IN)**

(72) Inventors: **Deepak Pahwa, Delhi (IN); William Charles Griffiths, Palm Beach Gardens, FL (US); Marco Sammartini, Vanegono Inferiore (IT); Rajan Sachdev, Delhi (IN); Kuldeep Singh Malik, New Delhi (IN)**

(73) Assignee: **BRY AIR (ASIA) PVT. LTD., Delhi (IN)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 24 days.

(21) Appl. No.: **14/366,922**

(22) PCT Filed: **Dec. 19, 2012**

(86) PCT No.: **PCT/IN2012/000831**

§ 371 (c)(1),
(2) Date: **Jun. 19, 2014**

(87) PCT Pub. No.: **WO2013/093942**

PCT Pub. Date: **Jun. 27, 2013**

(65) **Prior Publication Data**

US 2014/0345153 A1 Nov. 27, 2014

(30) **Foreign Application Priority Data**

Dec. 20, 2011 (IN) 3735/DEL/2011

(51) **Int. Cl.**

F26B 5/16 (2006.01)

F26B 21/08 (2006.01)

(Continued)

(52) **U.S. Cl.**

CPC **F26B 5/16** (2013.01); **F26B 21/083** (2013.01); **F26B 25/003** (2013.01); **F26B 25/22** (2013.01);

(Continued)

(58) **Field of Classification Search**

CPC F26B 5/00; F26B 5/16; F26B 7/00; F26B 9/00; F26B 11/00; F26B 21/00; F26B 21/01; F26B 25/00; F26B 25/003; F24F 3/00; F24F 3/1423; F24F 11/00; B01D 53/00; B01D 53/261

(Continued)

(56)

References Cited

U.S. PATENT DOCUMENTS

3,259,995 A * 7/1966 Powischill F26B 17/04
236/15 BC
3,765,100 A * 10/1973 Heidtmann D06F 58/28
34/533

(Continued)

FOREIGN PATENT DOCUMENTS

DE 3929858 A1 * 3/1991 F26B 21/04
EP 0 437 267 A1 7/1991

(Continued)

Primary Examiner — Stephen M Gravini

(74) *Attorney, Agent, or Firm* — Ladas & Parry, LLP

(57)

ABSTRACT

The present invention relates to a method for moisture determination and control using real time measurement of the moisture content of the material being processed. The present invention also provides a device that is used for moisture determination and control based on real time measurement of moisture content of a material being processed. The present invention is particularly suitable for controlling the moisture content of a material in a drying process, such as in a drying hopper, where the material moisture content is measured at an inlet and an outlet of the drying process. The drying process is further controlled by

(Continued)

