US009636619B2

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

(10) **Patent No.: US 9,636,619 B2**
(45) **Date of Patent: May 2, 2017**

(54) **APPARATUS AND METHODS FOR LARGE PARTICLE ASH SEPARATION FROM FLUE GAS USING SCREENS HAVING SEMI-ELLIPTICAL CYLINDER SURFACES**

(71) Applicant: **Integrated Global Services, Inc.**, Midlothian, VA (US)

(72) Inventors: **Mark A. Buzanowski**, Richmond, VA (US); **Richard B. Crawford**, Richmond, VA (US); **Iain Stuart Hall**, Midlothian, VA (US); **Jake King**, Powhatan, VA (US)

(73) Assignee: **Integrated Global Services, Inc.**, Richmond, VA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 162 days.

(21) Appl. No.: **14/559,511**

(22) Filed: **Dec. 3, 2014**

(65) **Prior Publication Data**

US 2015/0075378 A1 Mar. 19, 2015

Related U.S. Application Data

(62) Division of application No. 13/633,717, filed on Oct. 2, 2012, now Pat. No. 8,936,662.

(51) **Int. Cl.**

B01D 46/10	(2006.01)
B01D 39/10	(2006.01)
F23J 3/04	(2006.01)

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

CPC ..... ***B01D 46/103*** (2013.01); ***B01D 39/10*** (2013.01); ***F23J 3/04*** (2013.01); (Continued)

(58) **Field of Classification Search**

CPC .. B01D 46/103; B01D 39/10; B01D 2275/20; B01D 2275/206; B01D 2258/0283; F23J 3/04

See application file for complete search history.

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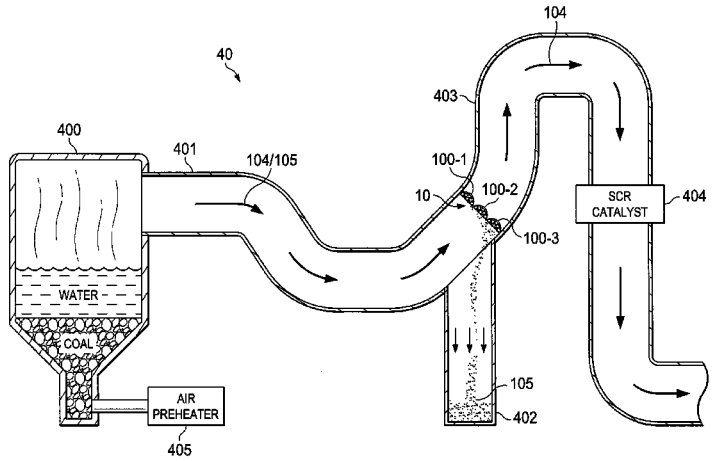
Primary Examiner — Robert Clemente

(74) *Attorney, Agent, or Firm* — Norton Rose Fulbright US LLP

(57) **ABSTRACT**

Apparatus for separating ash particles from a flue gas. The apparatus includes a screen that has a plurality of semi-elliptical cylinder surfaces. The semi-elliptical cylinder surfaces having holes through which said flue gas flows and through which the ash particles will not pass. The screen has a single layer for performing the separation in a manner such that the ash particles fall away from the screen and collect outside of the screen. A method of reducing velocity of a flue gas passing through screening apparatus for separating flue gas from ash particles. The method includes replacing a first screen of the screening apparatus with a second screen that has a plurality of semi-elliptical cylinder surfaces.

12 Claims, 8 Drawing Sheets