Title (en)

CYCLONIC ELEVATOR AND METHOD FOR USING SAME

Title (de)

ZYKLONAUFZUG UND VERWENDUNGSVERFAHREN DAFÜR

Title (fr)

ÉLÉVATEUR CYCLONIQUE ET SON PROCÉDÉ D'UTILISATION

Publication

EP 2655894 A4 20140514 (EN)

Application

EP 11851600 A 20111221

Priority

- US 201061427036 P 20101223
- US 2011066629 W 20111221

Abstract (en)

[origin: WO2012088340A2] A cyclonic elevator tube comprising a manifold which supplies fluid under pressure via an annular transition ring with multiple, circumferentially spaced jet orifices. These orifices are set at inwardly and circumferentially directed compound angles for ejecting vortex jets of pressurized fluid through the elevator, to ultimately cause transportation of fluid material through the tubes. This apparatus comprises: a cylindrical chamber; a plurality of helically shaped venturi tubes spaced around the internal circumference of the chamber; a manifold connected to the inlet ends of the venturi tubes; and a high pressure gas supply connected to the manifold. The helix can be right or left handed and preferably the venturi tubes extend for less than one turn of the helix. The angle that the tangent of the helix makes with the longitudinal axis of the chamber is between 1° and 89°. The internal circumference of the chamber may be larger at the inlet end than at the outlet end.

IPC 8 full level

F04F 5/42 (2006.01); **F04F 5/46** (2006.01)

CPC (source: EP)

F04F 5/16 (2013.01); **F04F 5/24** (2013.01); **F04F 5/42** (2013.01); **F04F 5/46** (2013.01); **F04F 5/466** (2013.01)

Citation (search report)

- [I] FR 1200145 A 19591218 - BERTIN & CIE
- [A] US 4227863 A 19801014 - SOMMERER RAYMOND
- See references of WO 2012088340A2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

WO 2012088340 A2 20120628; **WO 2012088340 A3 20121026**; BR 112013016120 A2 20180710; BR 112013016120 B1 20210217; CL 2013001873 A1 20140421; CO 6791583 A2 20131114; DK 2655894 T3 20190128; EP 2655894 A2 20131030; EP 2655894 A4 20140514; EP 2655894 B1 20181017; PE 20141082 A1 20140924

DOCDB simple family (application)

US 2011066629 W 20111221; BR 112013016120 A 20111221; CL 2013001873 A 20130624; CO 13152939 A 20130627; DK 11851600 T 20111221; EP 11851600 A 20111221; PE 2013001466 A 20111221