

Title (en)  
PUMPING SYSTEM AND METHOD

Title (de)  
PUMPSYSTEM UND -VERFAHREN

Title (fr)  
PROCÉDÉ ET SYSTÈME DE POMPAGE

Publication  
**EP 3135859 A2 20170301 (EN)**

Application  
**EP 16183123 A 20160805**

Priority

- US 2015043694 W 20150805
- US 201514956601 A 20151202
- US 201514956527 A 20151202
- US 201514956545 A 20151202
- US 201514956863 A 20151202

Abstract (en)  
A pumping method can include displacing a rod string with pressure applied to an actuator by a pressure source including an accumulator and a separate gas volume in communication with the accumulator. A sensor indicates whether a fluid is in the gas volume. A pumping system can include an actuator, a pump connected between the actuator and an accumulator, a hydraulic fluid contacting a gas in the accumulator, a separate gas volume in communication with the accumulator, and a sensor that detects the hydraulic fluid in the gas volume. Another pumping system can include an actuator, a pump connected between the actuator and an accumulator that receives nitrogen gas from a nitrogen concentrator assembly while a hydraulic fluid flows between the pump and the actuator, a separate gas volume in communication with the accumulator, and a sensor that detects a presence of the hydraulic fluid in the gas volume.

IPC 8 full level  
**E21B 43/12** (2006.01)

CPC (source: EP US)  
**E21B 43/126** (2013.01 - EP US)

Citation (applicant)  
US 3696675 A 19721010 - GILMOUR A SCOTT

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3128122 A1 20170208; EP 3128122 B1 20200923**; EP 3128123 A2 20170208; EP 3128123 A3 20170531; EP 3128123 B1 20200729; EP 3135859 A2 20170301; EP 3135859 A3 20170531; EP 3135859 B1 20180926; EP 3135860 A2 20170301; EP 3135860 A3 20170524; EP 3135860 B1 20200729

DOCDB simple family (application)  
**EP 16183105 A 20160805**; EP 16183114 A 20160805; EP 16183123 A 20160805; EP 16183126 A 20160805