

20 Documents

Publication numbers	Title	Current assignees
US20050256646 A1	Mud gas isotope logging interpretive method in oil and gas drilling operations	ELLIS LEROY
WO201871029 A1	Gas isotope analysis	HALLIBURTON ENERGY SERVICES
US20110297370 A1	Hydrocarbon production allocation methods and systems	CONOCOPHILLIPS
WO200959132 A1	Processing gas isotope measurements in association with logs from oil and gas drilling operations	ELLIS LEROY
EP1328787 A1	Method for performing chemical and isotopic analysis and measurements on constituents transported by a bore fluid	IFP ENERGIES NOUVELLES
EP-360862 A1	Isotope-ratio-monitoring gas chromatography-mass spectrometry apparatus and method	ADVANCED RESEARCH & TECHNOLOGY INSTITUTE
WO200721455 A2	Method and apparatus for measuring isotopic characteristics	HALLIBURTON ENERGY SERVICES, ...
US20030228708 A1	Process and apparatus for providing a gaseous substance for the analysis of chemical elements or compounds	UNIVERSITY OF BERN
US4517461 A	Carbon isotope analysis of hydrocarbons	PHILLIPS PETROLEUM
US4833915 A	Method and apparatus for detecting formation hydrocarbons in mud returns, and the like	CONOCO
EP-306332 A2	Method and apparatus for the determination of isotopic composition	MICROMASS
US6290000 B1	Quantification of the characteristics of porous formations while drilling	CANADIAN LOGGING SYSTEMS
WO200907042 A2	Device for providing gases, in particular for isotopic ratio analysis	THERMO FISHER SCIENTIFIC
US5783741 A	Capillary furnace for improved peak resolution in gas isotope chromatography	ATLANTIC RICHFIELD
WO2009121506 A1	Device and method for producing co ₂ , n ₂ and /or so ₂ from a sample	THERMO FISHER SCIENTIFIC
EP1067488 A1	A stable isotopic identification and method for identifying products by isotopic concentration	JASPER, JOHN P.
EP-729577 A1	Method of analysing isotopic composition and isotopic composition analyser	FISONS, ...
EP1887342 A1	Device for quantifying the relative contents of two isotopes of at least one specific gaseous constituent contained in a gaseous sample from a fluid related assembly and process.	GEOSERVICES EQUIPEMENTS
WO9900575 A2	Drilling system with sensors for determining properties of drilling fluid downhole	BAKER HUGHES
US20030226394 A1	Process and apparatus for providing gas for isotopic ratio	BERN UNIVERSITY OF

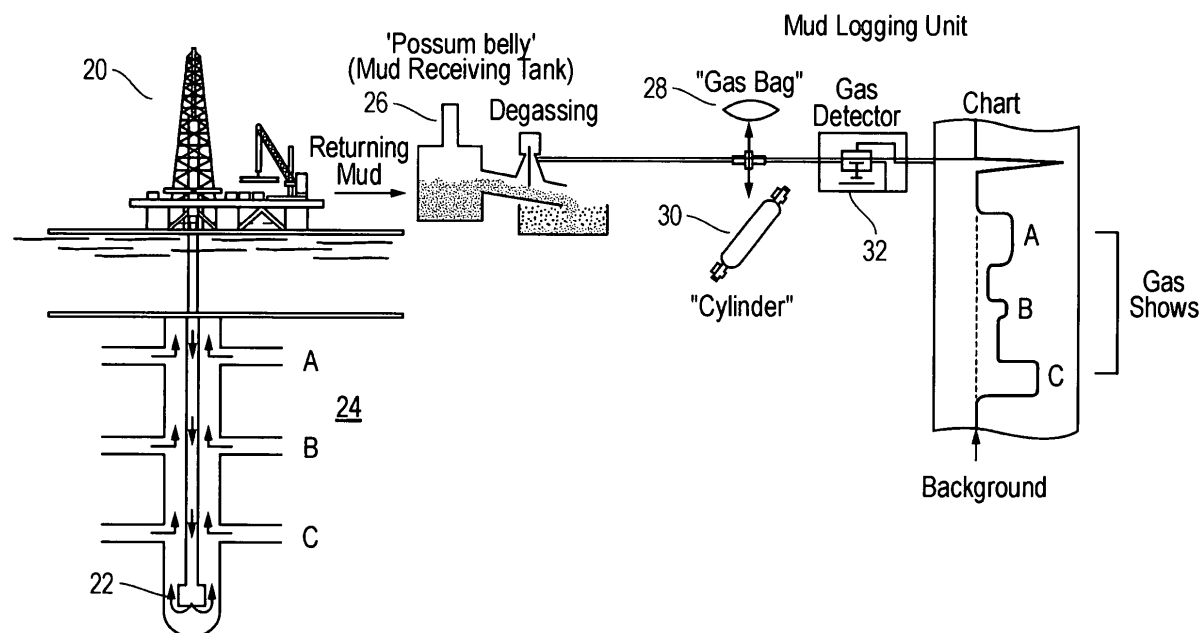
Publication numbers	Title	Current assignees
	analysis	

Family 1/20 - FAMPAT - ©Questel

Title

(US7124030)

Mud gas isotope logging interpretive method in oil and gas drilling operations

Images**Publication numbers with kind code & date**

US7529626	B1	2009-05-05	US7529626
US7174254	B2	2007-02-06	US7174254
US7124030	B2	2006-10-17	US7124030
US20050256646	A1	2005-11-17	US20050256646
US20050256647	A1	2005-11-17	US20050256647

**Abstract**

(US20050256646)

A method of interpreting mud gas samples in a drilling operation of a target area. The method starts with obtaining a plurality of mud gas samples at a plurality of incremental depths of the target area. The plurality of mud gas samples are analyzed to find various isotopic data at each depth. The isotopic data of the mud gas samples are plotting on several charts to provide a visual representation of the isotopic data trends. The charts may include: depth versus ethane/methane; depth versus $\delta^{13}\text{C}$ per mil; and depth versus $\delta^{13}\text{C}$ and gas show. In addition, the percentage methane versus $\delta^{13}\text{C}$ is provided on a separate chart. This percentage methane versus $\delta^{13}\text{C}$ chart provides engineering and geological information such as the location of lithological hydrocarbon seals, barriers, and zones of good hydrocarbon communication (e.g., compartments). This engineering and geological information is then correlated with the other charts.

Inventors

ELLIS LEROY

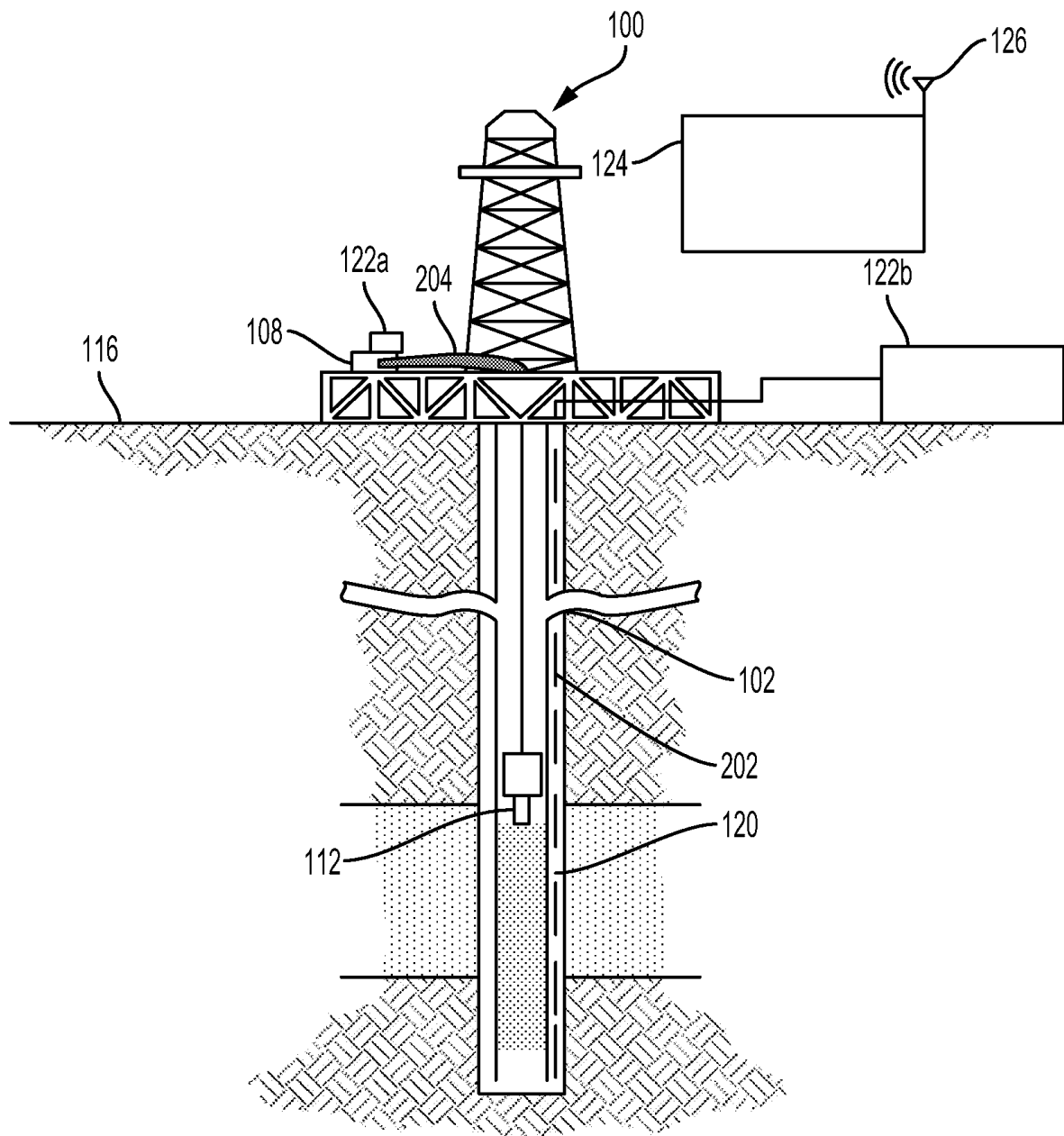
Family 2/20 - FAMPAT - ©Questel

Title

(WO201871029)

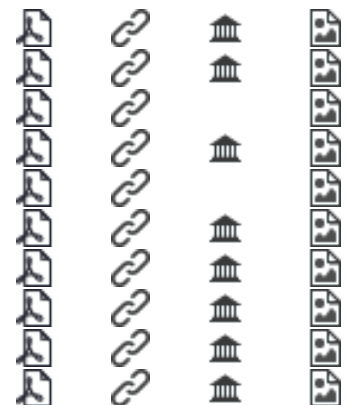
Gas isotope analysis

Images



Publication numbers with kind code & date

US20190368345	A1	2019-12-05	US20190368345
BR112019004797	A2	2019-06-04	BR112019004797
CO2019002203	A2	2019-05-31	CO2019002203
GB2567123	A8	2019-04-17	GB2567123
GB201901979	D0	2019-04-03	GB201901979
GB2567123	A	2019-04-03	GB2567123
BR112019004797	A1	2019-03-26	BR112019004797
AU2016425994	A1	2019-03-07	AU2016425994
NO20190259	A1	2019-02-25	NO20190259
WO2018/071029	A1	2018-04-19	WO201871029



Abstract

(WO2018/071029)

Systems and methods are provided for analyzing isotopes of a gas from a wellbore to determine geological information associated with the wellbore. A drill device can be used to drill rocks or particles in a wellbore, which can cause a gas to be released within the wellbore. Fluid can be pumped into the wellbore as the drill bit drills the rocks or particles and the fluid, along with the gas released, can flow through the wellbore and to a surface of the wellbore. A gas detector can be positioned near the wellbore for detecting an amount of gas and a type of gas in the fluid and gas mixture and transmitting data about the amount and type of the gas to a computing device. The computing device can output data based on the

amount and type of gas in the mixture for determining geological information about the wellbore.

Inventors

ROWE MATHEW DENNIS

GOSNEY JON TROY

Latest standardized assignees - inventors removed

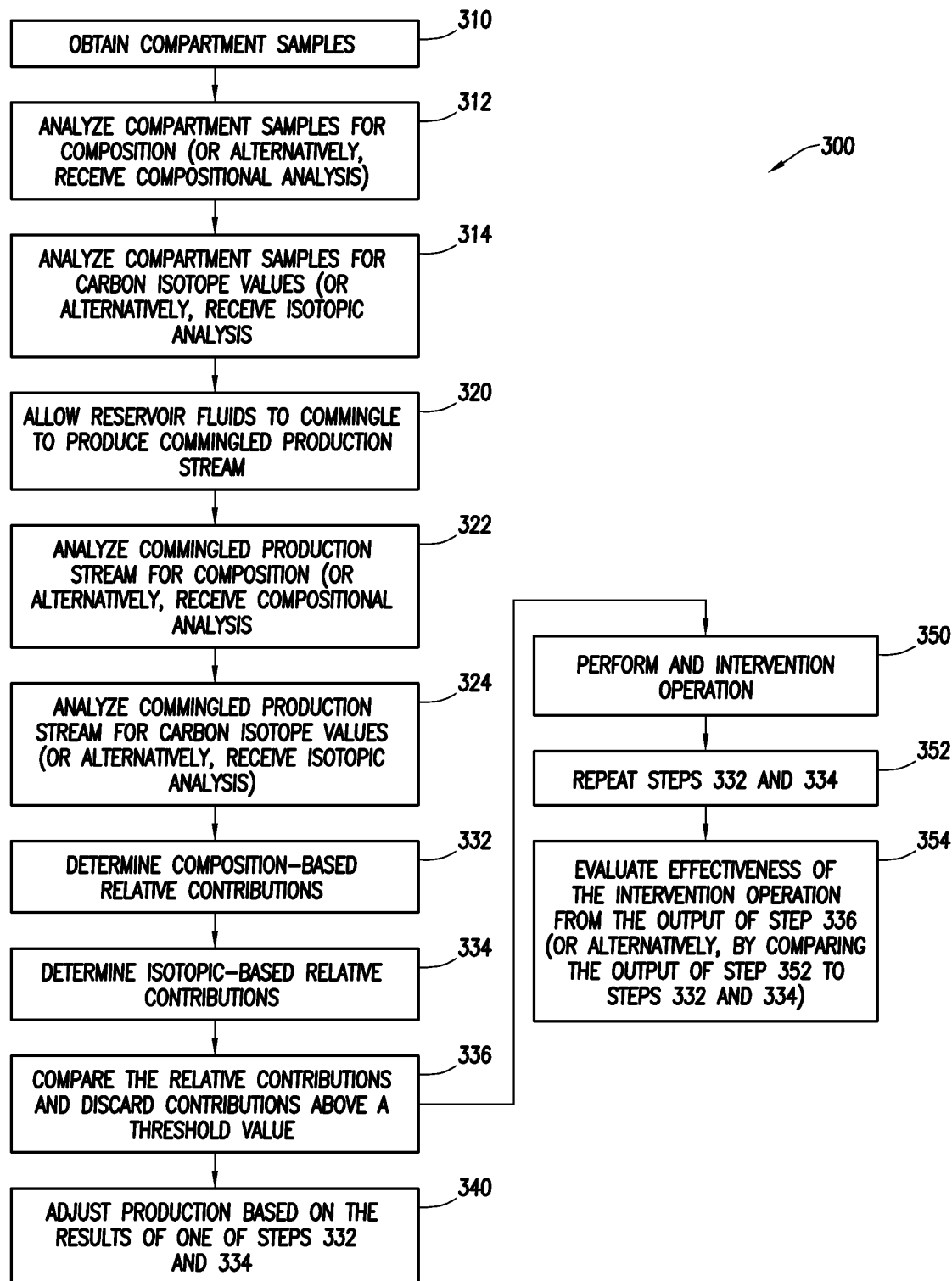
HALLIBURTON ENERGY SERVICES

Family 3/20 - FAMPAT - ©Questel

Title

(US8666667)

Hydrocarbon production allocation methods and systems

Images

Publication numbers with kind code & date

CA2741791	C	2016-02-23	CA2741791
US8666667	B2	2014-03-04	US8666667
US20110297370	A1	2011-12-08	US20110297370
CA2741791	A1	2011-12-07	CA2741791

**Abstract**

(US20110297370)

Methods and systems are provided for allocating production among reservoir compartments by way of compositional and isotopic analysis. That is, where individual reservoir compartments contribute differing amounts of fluid to a commingled production stream, the methods herein determine the relative contribution of fluid volume from each reservoir compartment. Both a composition-based relative contribution and an isotope-based relative contribution of fluid from each reservoir compartment may be determined to allocate production to each reservoir compartment, the determinations respectively being based on composition mass balances and stable carbon isotope mass balances of components. The combination of both allocation analysis provides quality checks on the results that identify improper allocations that may arise. In addition to production allocation, other applications include, among others, determining the effectiveness of intervention operations and providing feedback for adjusting operations. Advantages include lower costs, higher accuracies, and ease of use as compared to conventional methods.

Inventors

MICHAEL GERALD ERIC

JOKANOLA OLUFEMI AKANDE

Latest standardized assignees - inventors removed

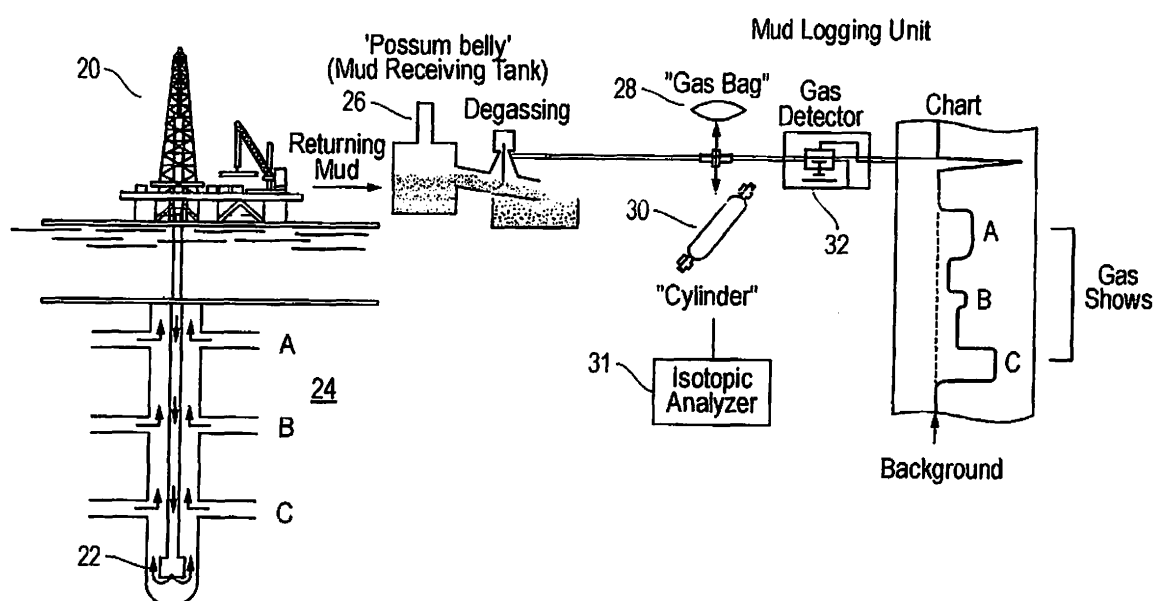
CONOCOPHILLIPS

Family 4/20 - FAMPAT - ©Questel

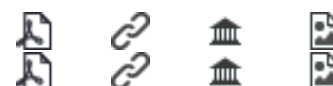
Title

(WO200959132)

Processing gas isotope measurements in association with logs from oil and gas drilling operations

Images**Publication numbers with kind code & date**

WO2009/059132	A1	2009-05-07	WO200959132
US20080147326	A1	2008-06-19	US20080147326

**Abstract**

(WO2009/059132)

A system and method of interpreting well log isotopic information in a drilling operation of a target area. The method begins by inputting a template for indicating a trend from analyzed mudgas samplings into a computing system. Next, a plurality of mud gas samplings are profiled through a well bore at a plurality of incremental depths of the well bore. The plurality of gas samplings are analyzed to obtain a plurality of isotopic data points associated with hydrocarbon isotopic composition of the plurality of gas samplings. The plurality of isotopic data points includes data associated with a composition of ethane and methane or other gaseous components within each of the mud gas samplings. A trend associated with the template is determined by the computing system from the plurality of isotopic data points. The plurality of isotopic data points is analyzed to geochemically interpret the geological information.

Inventors

ELLIS LEROY

Family 5/20 - FAMPAT - ©Questel

Title

(EP1328787)

Method for performing chemical and isotopic analysis and measurements on constituents transported by a bore fluid

Publication numbers with kind code & date

US20040014223	A1	2004-01-22	US20040014223
EP1328787	A1	2003-07-23	EP1328787
FR2815074	B1	2002-12-06	FR2815074
AU9564901	A	2002-04-22	AU200195649
WO02/31466	A1	2002-04-18	WO200231466
FR2815074	A1	2002-04-12	FR2815074

**Abstract**

(EP1328787)

The invention concerns a method for analysing and measuring constituents carried by a bore hole fluid during a drilling operation, comprising the following steps which consist in: sampling the bore fluid, extracting the constituents in vapour form, transporting said constituents to a mass spectrograph, measuring the $<^{13}\text{C}>/<^{12}\text{C}>$ ratio of the carbon isotopes contained in the constituents.

Inventors

AUDIBERT ANNIE

PRINZHOFER ALAIN

Latest standardized assignees - inventors removed

IFP ENERGIES NOUVELLES

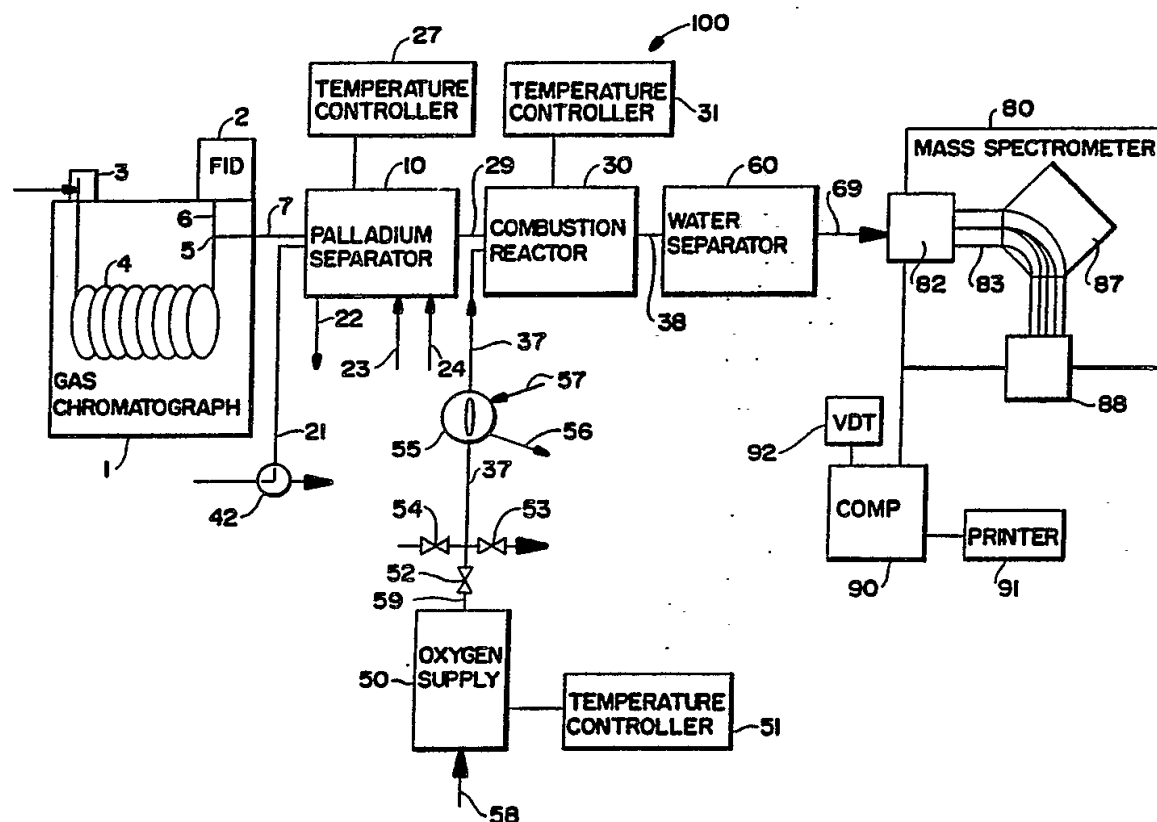
Family 6/20 - FAMPAT - ©Questel

Title

(EP-360862)

Isotope-ratio-monitoring gas chromatography-mass spectrometry apparatus and method

Images



Publication numbers with kind code & date

EP0360862	A4	1991-07-17	EP-360862
US5012052	A	1991-04-30	US5012052
JPH02503958	A	1990-11-15	JP02503958
EP0360862	A1	1990-04-04	EP-360862
WO89/09486	A1	1989-10-05	WO8909486



Abstract

(EP0360862)

An isotope-ratio-monitoring gas chromatography-mass spectrometry apparatus (100) and method are disclosed which provide for on-line analysis of isotope compositions with high precision. With the apparatus and method, samples are introduced in a hydrogen carrier gas into a gas chromatograph (1) and resolved into discrete compounds. The discrete compounds are thereafter introduced to a selectively permeable membrane separator (10), employing palladium, palladium alloy or other suitable material, to separate out the hydrogen carrier. A replacement carrier gas is simultaneously introduced to carry the chromatographic sample to a combustion reactor (30), water separator (60) and isotope-ratio monitoring mass spectrometer (80). The replacement carrier gas is introduced at a lower flowrate than the hydrogen carrier gas, thus permitting lower flowrates to be introduced to the mass spectrometer (80) to improve its precision. Flowrates to the mass spectrometer (80) are thus reduced without any loss of fractionation of the sample. An improved combustion system is employed to reduce system volume and equalize system pressure, while still providing quantitative combustion.

Inventors

HAYES, JOHN, M.

Latest standardized assignees - inventors removed

ADVANCED RESEARCH & TECHNOLOGY INSTITUTE

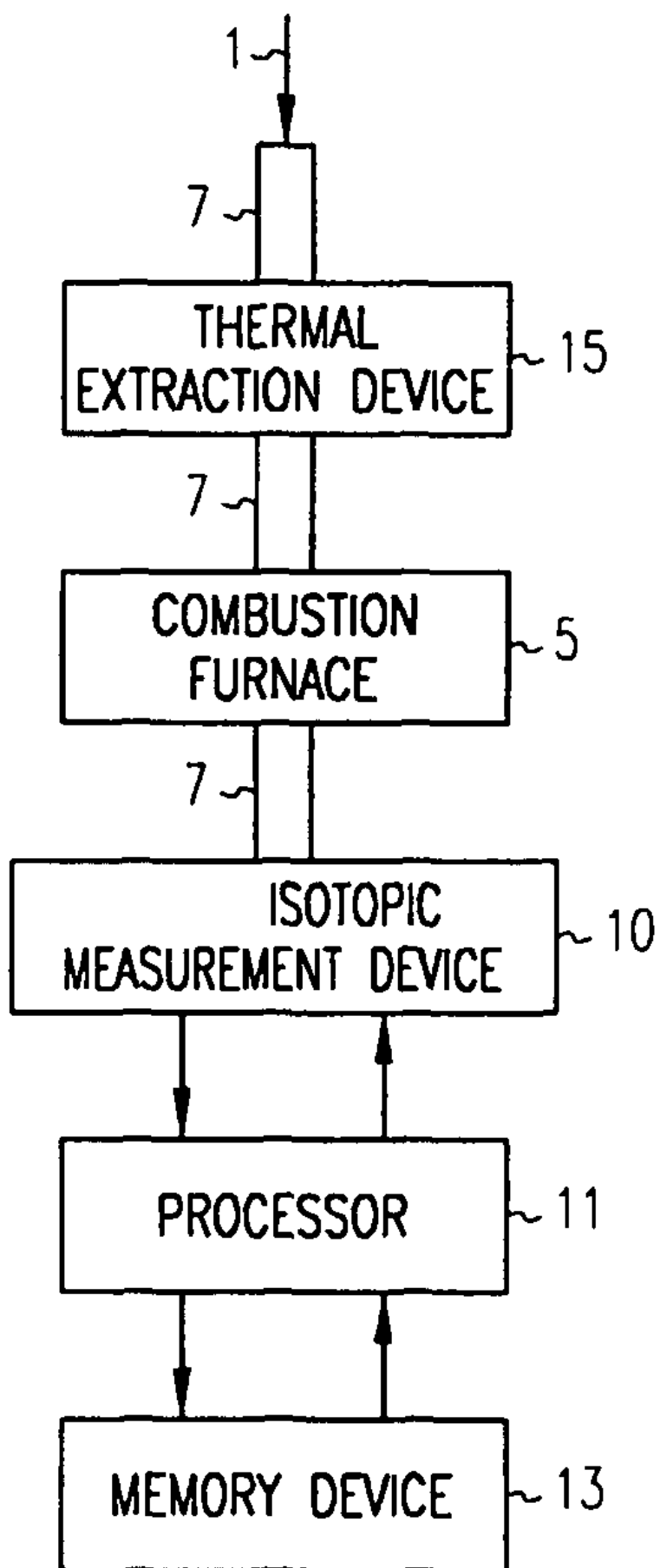
Family 7/20 - FAMPAT - ©Questel

Title

(WO200721455)

Method and apparatus for measuring isotopic characteristics

Images



Publication numbers with kind code & date

US7976780	B2	2011-07-12	US7976780
US20070178011	A1	2007-08-02	US20070178011
WO2007/021455	A3	2007-04-05	WO200721455
WO2007/021455	A2	2007-02-22	WO200721455

**Abstract**

(WO2007/021455)

Methods and apparatus are provided to measure isotopic characteristics of a number of sample types. Embodiments of the invention combine novel and existing components to produce more accurate isotopic information. Further, embodiments of the invention allow for isotopic readings to be taken and analyzed outside of a laboratory. An example of such an embodiment is an apparatus comprising a combustion furnace; a reactant tube passing through the combustion furnace; an injector coupled to one, or a combination of, the combustion furnace, and reactant tube, to introduce a sample; a laser isotopic measurement device coupled to the reactant tube on the exit end; and a processor electrically coupled to one, or a combination of, the injector, the combustion furnace, the reactant tube, and the isotopic measurement device, in which a carrier gas transports the sample through the apparatus.

Inventors

ELROD LOUIS W

JONES CHRISTOHER M

Latest standardized assignees - inventors removed

HALLIBURTON ENERGY SERVICES

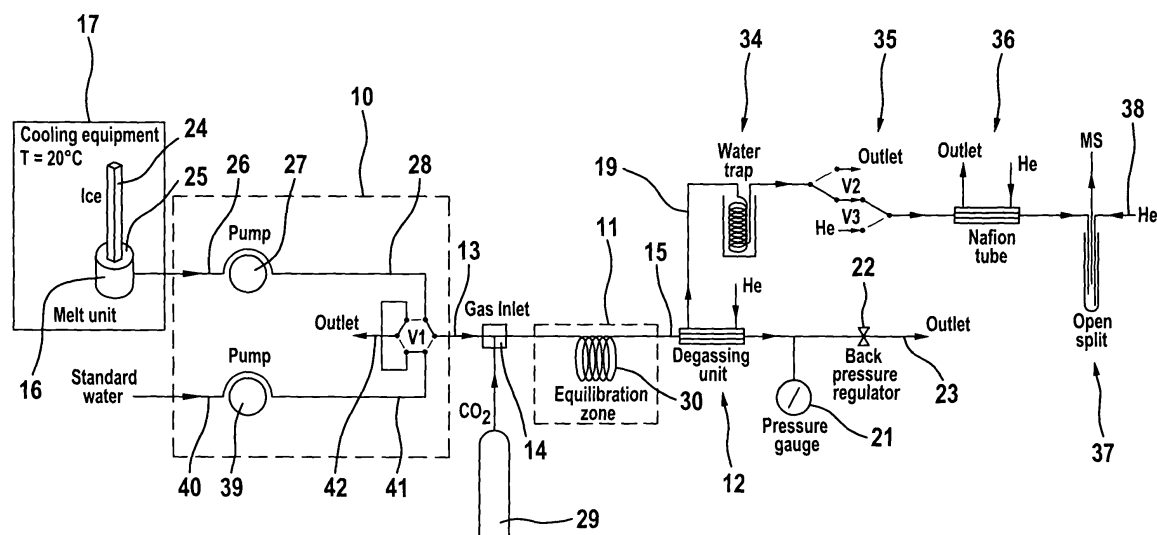
CALEB BRETT

Family 8/20 - FAMPAT - ©Questel

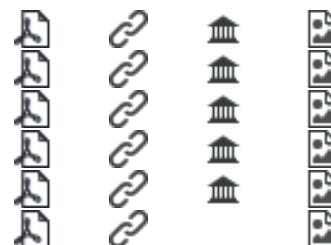
Title

(US7985597)

Process and apparatus for providing a gaseous substance for the analysis of chemical elements or compounds

Images**Publication numbers with kind code & date**

US7985597	B2	2011-07-26	US7985597
DE10256009	B4	2008-05-29	DE10256009
GB2421792	B	2006-12-20	GB2421792
GB2421792	A	2006-07-05	GB2421792
GB2389903	B	2006-06-07	GB2389903
GB0601633	D0	2006-03-08	GB200601633



GB2389903	A	2003-12-24	GB2389903
US20030228708	A1	2003-12-11	US20030228708
DE10256009	A1	2003-11-13	DE10256009
GB0308764	D0	2003-05-21	GB200308764

**Abstract**

(US20030228708)

The invention relates to a process and to an apparatus for providing a gaseous substance for the analysis of chemical elements or compounds. In one embodiment, a starting substance is continuously admixed with a reagent substance. This results in a gaseous reaction product which contains information about the elements of the starting substance, and a residual substance. The gaseous reaction product is separated from the residual substance and removed for analysis. One application is the isotopic analysis of oxygen or hydrogen from water.

Inventors

HUBER CHRISTOF

LEUENBERGER MARKUS

Latest standardized assignees - inventors removed

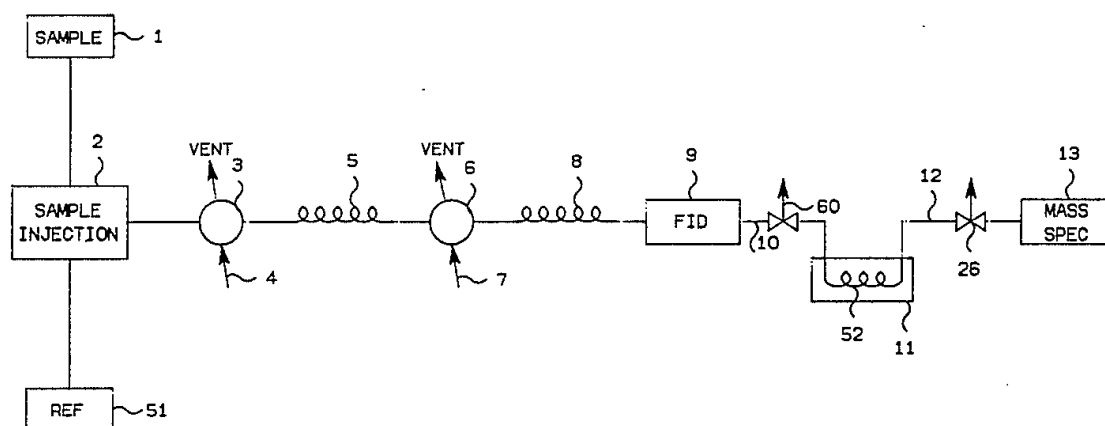
UNIVERSITY OF BERN

Family 9/20 - FAMPAT - ©Questel

Title

(US4517461)

Carbon isotope analysis of hydrocarbons

Images**Publication numbers with kind code & date**

US4517461	A	1985-05-14	US4517461
---------------------------	---	------------	-----------

**Abstract**

(US4517461)

Method and apparatus are provided for analysis of a sample of matter for at least one isotopic constituent of the sample. The method involves introduction of a sample containing an isotope of interest into an analytical detector operative to convert the sample into a product analyzable by a mass spectrometer and to detect a property of the sample representative of the quantity of at least one of its constituents, and passing the conversion product from the detector to a mass spectrometer operative to detect the isotopic ratio of interest. The method optionally includes passing the sample or a source material through a chromatograph column for separation into suitable fractions. The apparatus includes an appropriate analytical detector and a mass spectrometer with optional chromatography column. The method and instrument are particularly suited for analysis of oil-related samples such as crude oil fractions, natural gas, soil gas and oil shale as a tool in oil prospecting.

Inventors

CRANDALL JOHN A

Latest standardized assignees - inventors removed

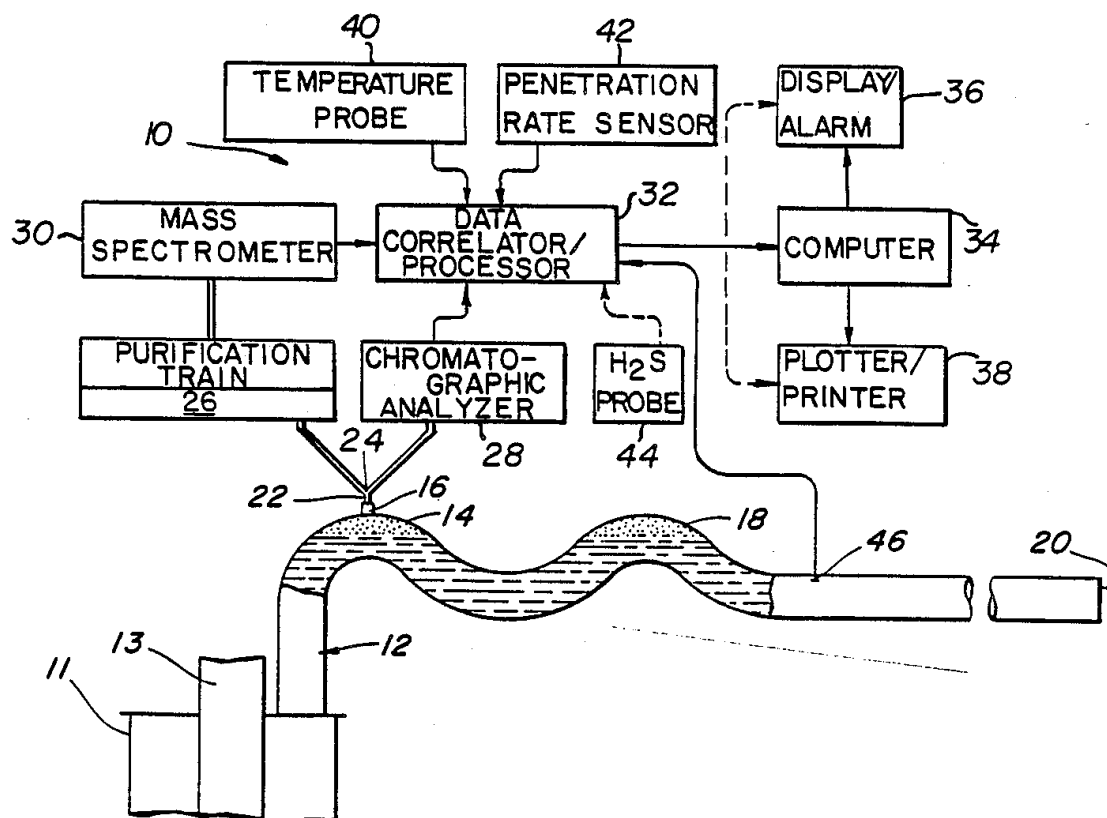
PHILLIPS PETROLEUM

Family 10/20 - FAMPAT - ©Questel

Title

(US4833915)

Method and apparatus for detecting formation hydrocarbons in mud returns, and the like

Images**Publication numbers with kind code & date**

GB2213174	B	1991-07-31	GB2213174
GB2213174	A	1989-08-09	GB2213174
NO885388	L	1989-06-05	NO-885388
US4833915	A	1989-05-30	US4833915
GB8827330	D0	1988-12-29	GB8827330
NO885388	D0	1988-12-02	NO8805388

**Abstract**

(US4833915)

A method and logger apparatus for analyzing mud returns to determine the presence of formation hydrocarbons. The logger takes a gas sample from a gas trap formed in the mud return line, purges it of all non-helium gases either by condensing them or chemically reacting them out of the sample. The sample is then fed into a special helium mass spectrometer that identifies how much of each helium isotope (^3He and ^4He) is present. This data is then fed to a correlator/computer and an isotope ratio calculated and monitored. A significant increase in this ratio is indicative of the presence of formation hydrocarbons. The computer uses additional input to track the sample vs its original downhole location to enable proper identification. The method and apparatus are particularly useful with oil-based drilling fluids.

Inventors

RADD FREDERICK J

FERRELL HOWARD H

Latest standardized assignees - inventors removed

CONOCO

Family 11/20 - FAMPAT - ©Questel

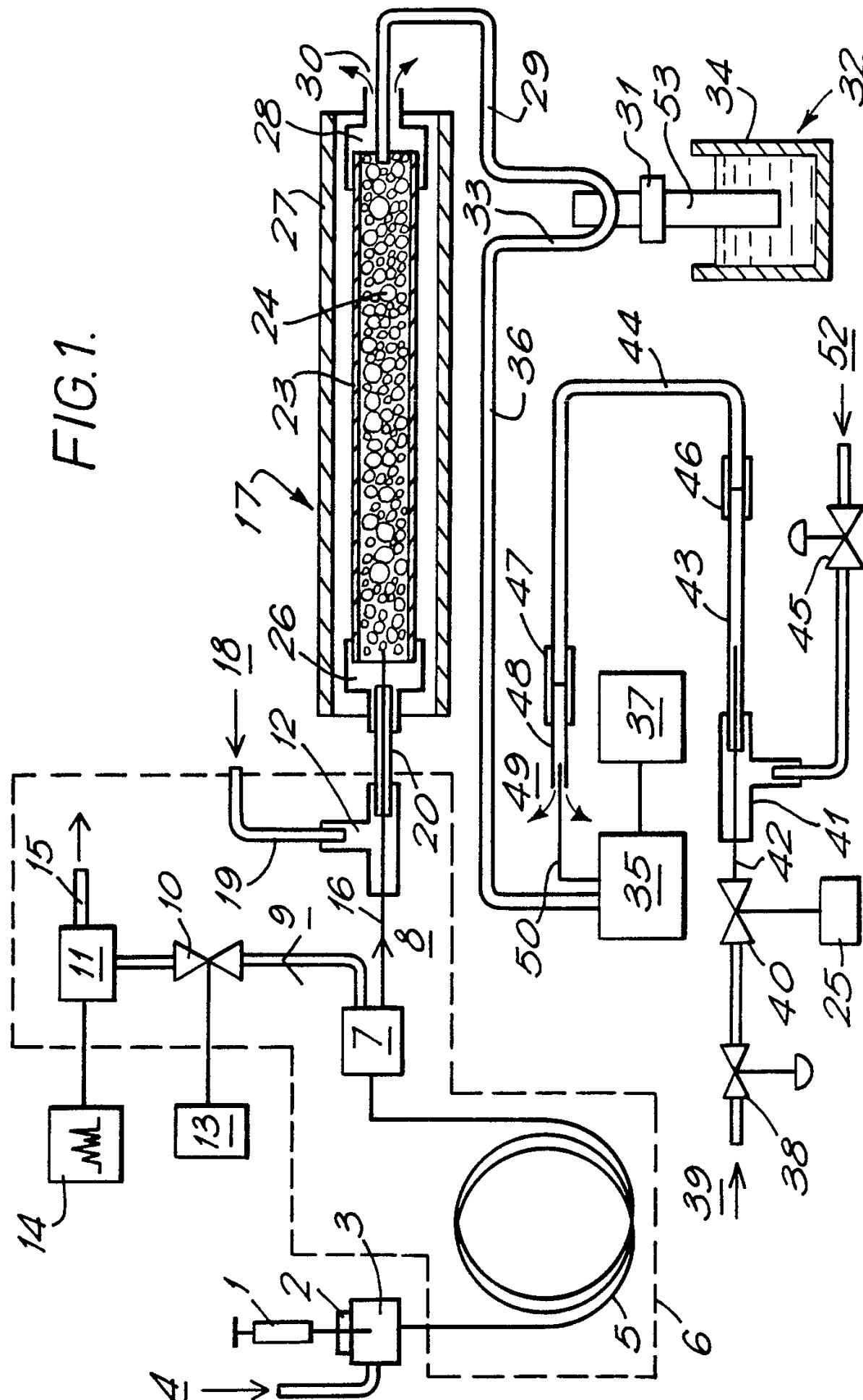
Title

(EP-306332)

Method and apparatus for the determination of isotopic composition

Images

FIG. 1.



JP2934879
DE3876545



DE3876545	D1	1993-01-21	DE3876545				
EP0306332	B1	1992-12-09	EP-306332				
US4916313	A	1990-04-10	US4916313				
EP0306332	A3	1990-01-31	EP-306332				
JP01127955	A	1989-05-19	JP01127955				
EP0306332	A2	1989-03-08	EP-306332				
GB8811379	D0	1988-06-15	GB8811379				
GB8720586	D0	1987-10-07	GB8720586				

Abstract

(EP0306332)

The invention provides a method and apparatus for the mass spectrometric determination of the isotopic composition of an element comprised in a sample by gas chromatography-isotopic ratio mass spectrometry. As a sample elutes from the column 5, it enters a sample conversion means 17 which converts the element to an analysis gas (a gas comprising the element in elemental form or in the form of a simple compound, eg N₂ or CO₂) which is admitted into the mass spectrometer 35 only during a second time interval corresponding to the elution of the peak containing the sample from column 5. One or more calibration samples of a reference gas are admitted into the spectrometer 35 during first time intervals which do not overlap the second time interval, thereby minimizing the contribution of the analysis gas to the reference gas mass analysis, and v.v. Various devices (7,12,30,41,49) are provided to minimize disturbance to the flow of gas into the spectrometer 35 during operation of the method.

Inventors

HALL, KEITH

FREEDMAN, PHILIP ANTHONY

JUMEAU, ELIZABETH JANINE

GUILLUY, ROGER

PACHIAUDI, CHRISTIANE

RIOU, JEAN PAUL

Latest standardized assignees - inventors removed

MICROMASS

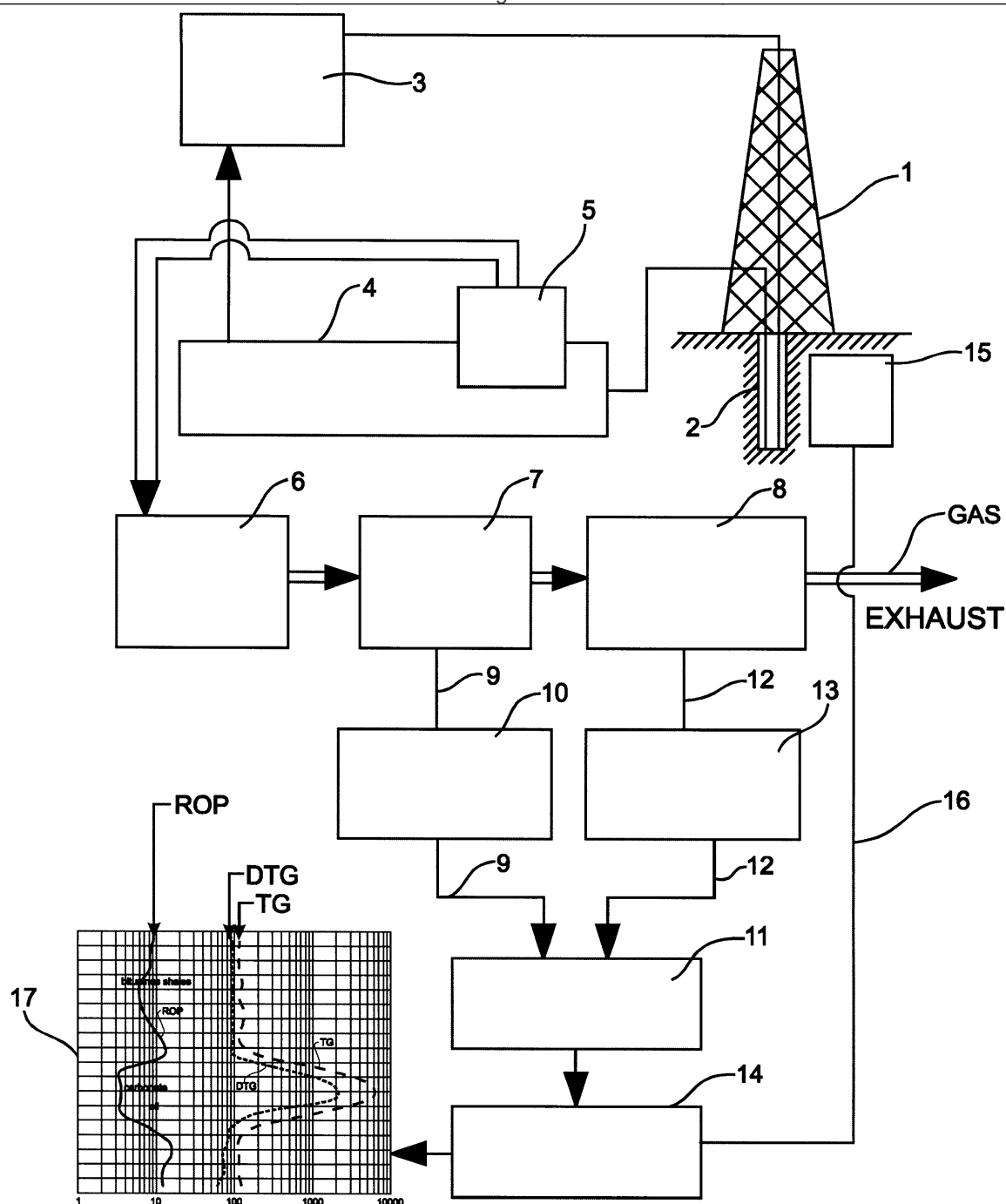
Family 12/20 - FAMPAT - ©Questel

Title

(US6290000)

Quantification of the characteristics of porous formations while drilling

Images



Publication numbers with kind code & date

US6290000

B1 2001-09-18

US6290000

CA2256248

A1 2000-06-16

CA2256248



Abstract

(US6290000)

A method is provided for establishing the quantity and quality of hydrocarbons in the pores of a formation while drilling. One sensor (TG), applied to gas liberated from drilling mud, outputs a signal proportional to the concentration of hydrocarbons. Additional information acquired while drilling is combined with the TG analysis for quantifying a fraction of hydrocarbon in the pores of the drilled formation. Further and better quantification of hydrocarbons is achieved by normalizing drilling characteristics which are independent of porosity such as mud weight, weight on bit, bit rotational speed, and sampling dilution compared to the overall circulation of mud. Further, quality of the hydrocarbons is determinable using a second gas sensor which outputs a decreasing signal with increased concentrations of heavy hydrocarbons in the liberated gas and outputs an increasing signal with increasing concentrations of light hydrocarbons. The ratio of the first TG signal to the difference of the first and second signals (DTG) is indicative of the quality of the hydrocarbon.

Inventors

ZAMFES KONSTANDINOS S

Latest standardized assignees - inventors removed

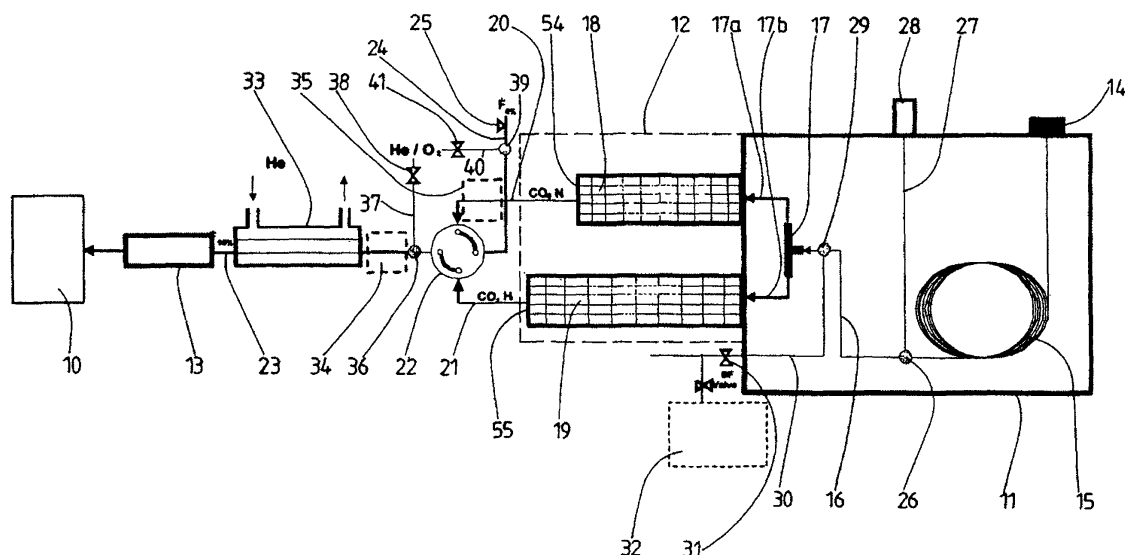
CANADIAN LOGGING SYSTEMS

Family 13/20 - FAMPAT - ©Questel

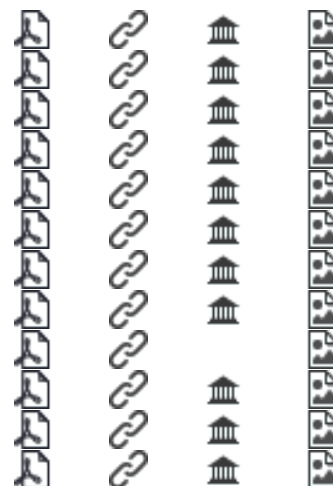
Title

(WO200907042)

Device for providing gases, in particular for isotopic ratio analysis

Images**Publication numbers with kind code & date**

US9709537	B2	2017-07-18	US9709537
DE112008001753	B4	2016-07-21	DE112008001753
US20140069167	A1	2014-03-13	US20140069167
US8578755	B2	2013-11-12	US8578755
GB2463612	B	2011-09-07	GB2463612
US20100212398	A1	2010-08-26	US20100212398
DE112008001753	A5	2010-07-22	DE112008001753
GB2463612	A	2010-03-24	GB2463612
GB201000956	D0	2010-03-10	GB201000956
WO2009/007042	A3	2009-04-02	WO200907042
WO2009/007042	A2	2009-01-15	WO200907042
DE102007031680	A1	2009-01-08	DE102007031680

**Abstract**

(WO2009/007042)

The invention relates to an apparatus having an analyser and having a device for providing gases for an analysis, in particular for determining isotopic ratios, wherein the analyser is connected downstream of the device, wherein the device for providing the gases has a first gas path (16) for a gas stream, a second gas path (23) and a first reactor (18) between the two gas paths, and wherein the first reactor (18) has an inlet side and an outlet side and the inlet side of the first reactor (18) faces the first gas path (16). The invention provides at least one second reactor (19) which is arranged parallel to, or in series with, the first reactor (18), wherein at least one of the reactors can be deactivated, or means are provided for circumventing at least one of the reactors.

Inventors

KRUMMEN MICHAEL

SCHLUETER HANS-JUERGEN

Latest standardized assignees - inventors removed

THERMO FISHER SCIENTIFIC

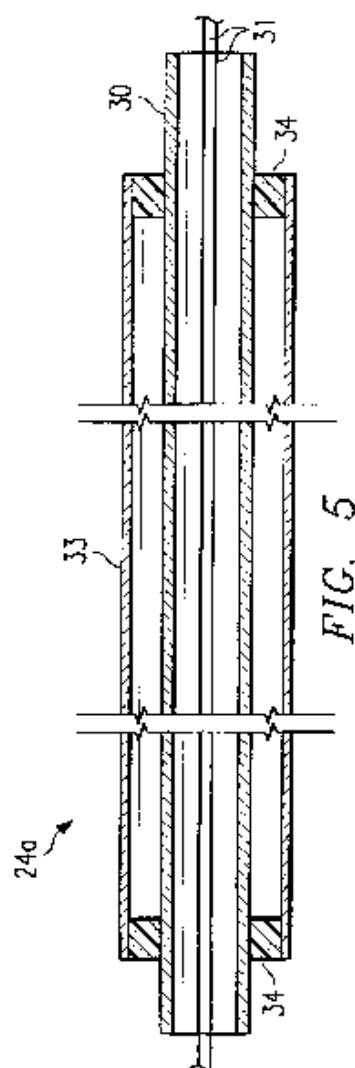
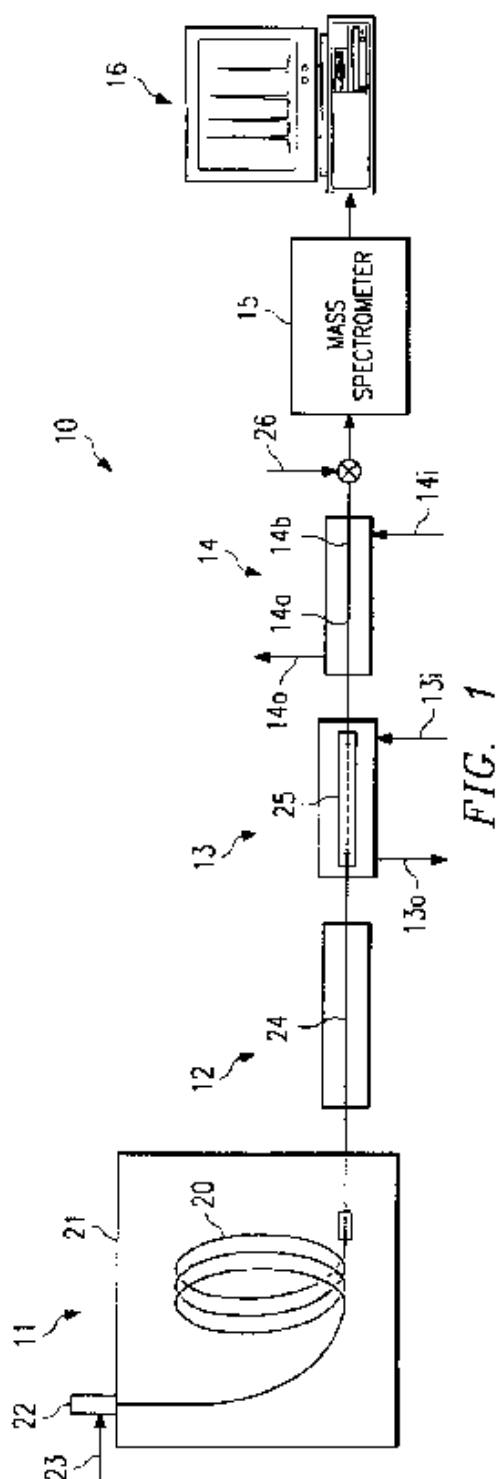
Family 14/20 - FAMPAT - ©Questel

Title

(US5783741)

Capillary furnace for improved peak resolution in gas isotope chromatography

Images



Publication numbers with kind code & date

US5783741

A 1998-07-21

US5783741



Abstract

(US5783741)

An isotope ratio monitoring gas chromatograph-mass spectrometer (irm-GC/MS) unit for generating a chromatogram having improved resolution for peaks representative of individual carbon dioxide isotopes measured when a complex GC amenable organic sample (e.g. petroleum hydrocarbons) is combusted in the presence of a metal catalyst. The present irm-GC/MS unit is similar to known irm-GC/MS units of this type except it uses a capillary combustion tube in the furnace which is connected to the capillary column and has approximately the same inside diameter as that of the capillary column (e.g. 0.25 mm I.D.) whereby any "dead volume" attributable to the combustion tube is substantially eliminated.

Inventors

ELLIS LEROY

FINCANNON ANN L

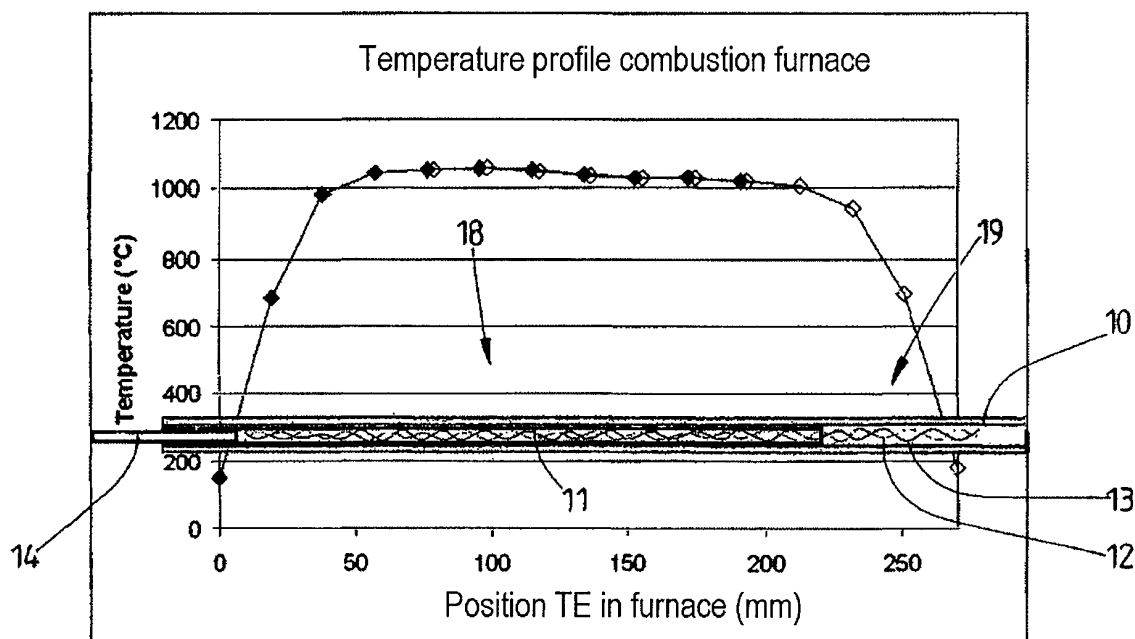
Latest standardized assignees - inventors removed

ATLANTIC RICHFIELD

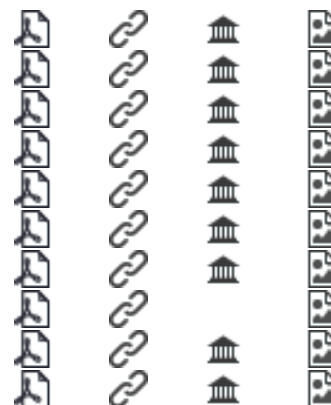
Family 15/20 - FAMPAT - ©Questel

Title

(WO2009121506)

Device and method for producing CO_2 , N_2 and /or SO_2 from a sample**Images****Publication numbers with kind code & date**

US9377446	B2	2016-06-28	US9377446
US20140127823	A1	2014-05-08	US20140127823
US8632726	B2	2014-01-21	US8632726
GB2471616	B	2012-11-28	GB2471616
DE112009000722	A5	2011-03-03	DE112009000722
US20110027161	A1	2011-02-03	US20110027161
GB2471616	A	2011-01-05	GB2471616
GB201017759	D0	2010-12-01	GB201017759
WO2009/121506	A1	2009-10-08	WO2009121506
DE102008016583	A1	2009-10-01	DE102008016583

**Abstract**

(WO2009/121506)

The invention relates to a device for producing CO_2 , N_2 and/or SO_2 from a sample for a quantitative analysis of the

sample, comprising a reactor structure and metals acting in an oxidizing manner or metal oxides in the reactor. According to the invention, the reactor structure has at least two zones through which the sample can flow, which is to say a first zone with reactor metal and reservoir metal, or only reactor metal, and a second zone with reactor metal and reservoir metal, or only reservoir metal, and following the first zone, wherein both metals can form oxides, and wherein the ratio of the reactor metal to the reservoir metal in the first zone is greater than in the second zone.

Inventors

KRUMMEN MICHAEL

Latest standardized assignees - inventors removed

THERMO FISHER SCIENTIFIC

Family 16/20 - FAMPAT - ©Questel

Title

(EP1067488)

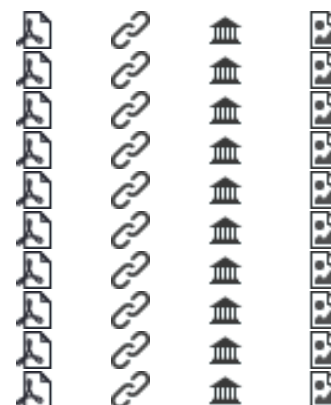
A stable isotopic identification and method for identifying products by isotopic concentration

Images

$$\delta^{13}\text{C}(o/oo) = \frac{(R_{\text{smp}} - 1)}{R_{\text{std}}} \times (1000)$$

Publication numbers with kind code & date

US20080125325	A1	2008-05-29	US20080125325
US7323341	B1	2008-01-29	US7323341
US20070054402	A1	2007-03-08	US20070054402
AU781959	C	2006-03-02	AU-781959
AU781959	B2	2005-06-23	AU-781959
DE1067488	T1	2001-09-20	DE1067488T
JP2001074696	A	2001-03-23	JP2001074696
AU4504700	A	2001-02-08	AU200045047
EP1067488	A1	2001-01-10	EP1067488
CA2313991	A1	2001-01-09	CA2313991



Abstract

(EP1067488)

A stable isotopic identification comprising a mathematical array of concentrations of isotopes found in a product, said mathematical array being presented in a machine readable form and comparable to analytical results whereby the product can be distinguished from other similar products, said machine readable form also being indexed through stored product information. The stored product information may be displayed when desired. By the stable isotopic identification of the invention, a product may be securely traced through manufacturing of a product, marketing of a product and the use of a product. A method of identifying products is also provided utilizing the stable isotopic identification including the steps of analyzing a product for the concentration of isotopes, arranging the concentrations of the isotopes in a mathematical array, formulating the mathematical in a machine readable form, assembling product information, and indexing the product information to the machine readable form of the mathematical array, maintaining both the indexing and the product information, and when desired measuring the isotopic concentration of a comparable substance, comparing mathematical arrays, and accessing stored product information through the indexing of the same to product information, whereby a product may be traced through manufacturing, the marketplace and use, identified, and indexed to product information.

Inventors

JASPER JOHN P

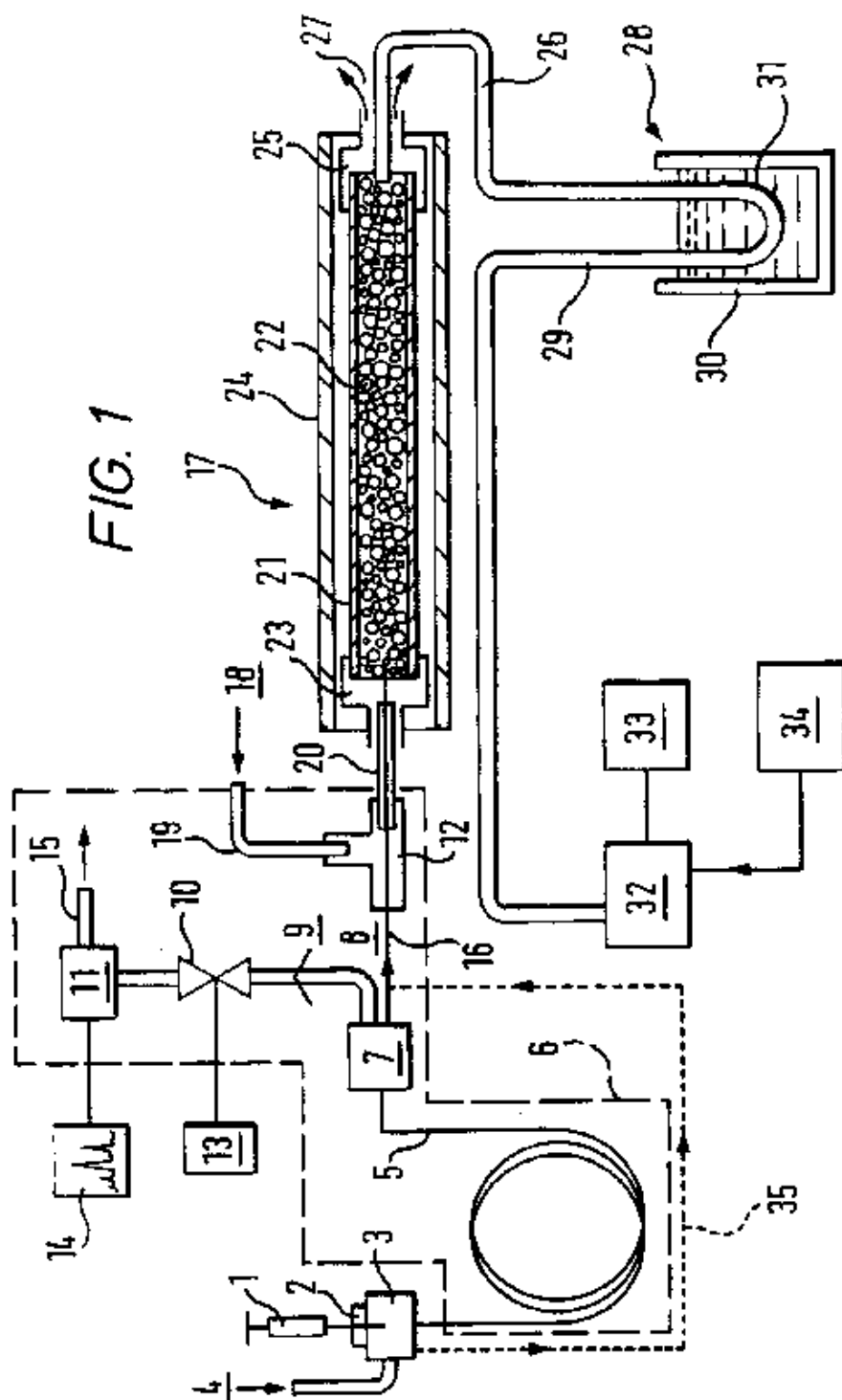
Family 17/20 - FAMPAT - ©Questel

Title

(EP-729577)

Method of analysing isotopic composition and isotopic composition analyser

Images



Publication numbers with kind code & date

JP3482497	B2	2003-12-22	JP3482497
DE69520425	T2	2001-07-05	DE69520425
DE69520425	D1	2001-04-26	DE69520425
ES2154733	T3	2001-04-16	ES2154733
EP0729577	B1	2001-03-21	EP-729577
US5766954	A	1998-06-16	US5766954
GB2297160	B	1997-12-10	GB2297160
JPH09508474	A	1997-08-26	JP09508474
EP0729577	A1	1996-09-04	EP-729577
GB2297160	A	1996-07-24	GB2297160



GB2297160	A	1996-07-24	GB2297160
GB9608267	D0	1996-06-26	GB9608267
WO96/08719	A1	1996-03-21	WO9608719
GB9418638	D0	1994-11-02	GB9418638

**Abstract**

(EP0729577)

A continuous flow method of determining the quantitative isotopic composition of hydrogen comprised in a compound is disclosed, together with apparatus for carrying out the method. The method involves introducing the sample to be analysed into a flow of carrier gas which does not contain hydrogen, the carrier gas then being arranged to flow through a heated catalytic reactor which contains a chromium-based catalyst. The sample is pyrolysed in the catalytic reactor so as to form molecular hydrogen which is then analysed mass-spectrometrically. Preferably a gas chromatograph is disposed before the catalytic reactor so that one or more components or a mixture may be separately analysed.

Inventors

FREEDMAN PHILIP ANTONY

BROCKWELL TIMOTHY GRAHAM

Latest standardized assignees - inventors removed

FISONS

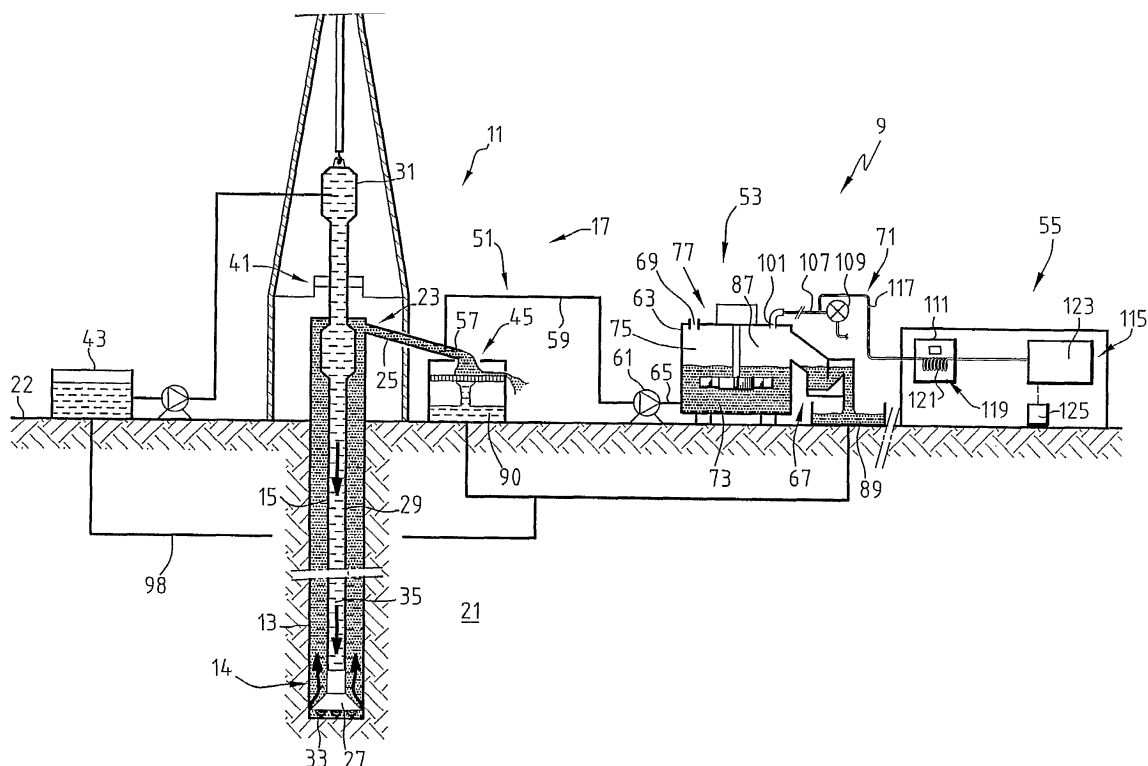
MICROMASS

Family 18/20 - FAMPAT - ©Questel

Title

(EP1887342)

Device for quantifying the relative contents of two isotopes of at least one specific gaseous constituent contained in a gaseous sample from a fluid related assembly and process.

Images**Publication numbers with kind code & date**

EP2049884	B1	2019-01-02	EP2049884
CA2660429	C	2016-07-12	CA2660429
US8810794	B2	2014-08-19	US8810794
BRPI0714482	A2	2013-04-24	BR200714482



BRPI0714482	A2	2013-04-24	BR200714482				
US20100031732	A1	2010-02-11	US20100031732				
NO20090622	L	2009-05-11	NO20090622				
EP2049884	A1	2009-04-22	EP2049884				
CA2660429	A1	2008-02-14	CA2660429				
WO2008/017949	A1	2008-02-14	WO200817949				
EP1887342	A1	2008-02-13	EP1887342				

Abstract

(EP1887342)

This device comprises a means (111) for forming a gaseous flow from the sample and a means (121) for separation of each specific gaseous constituent. It comprises a means (115) for quantifying the relative contents of the two isotopes to be analysed which comprise an optical measurement cell (127). The cell (127) comprises two mirrors (137A, 137B) which delimit a measurement cavity (147). The device comprises a means (161) for introducing an incident optical signal into the measurement cavity (147), a means (161) for generating a plurality of reflections of the signal in separate points (174A, 174B) on each mirror (137A, 137B) during its travel in the cavity, a means (133) for measuring a transmitted optical signal resulting from an interaction between the optical signal and each isotope in the measurement cavity (147), and a means (125) for calculating said relative contents on the basis of these signals.

Inventors

BREVIERE JEROME

BAER DOUGLAS

WHITICAR MICHAEL

Latest standardized assignees - inventors removed

GEOSERVICES EQUIPEMENTS

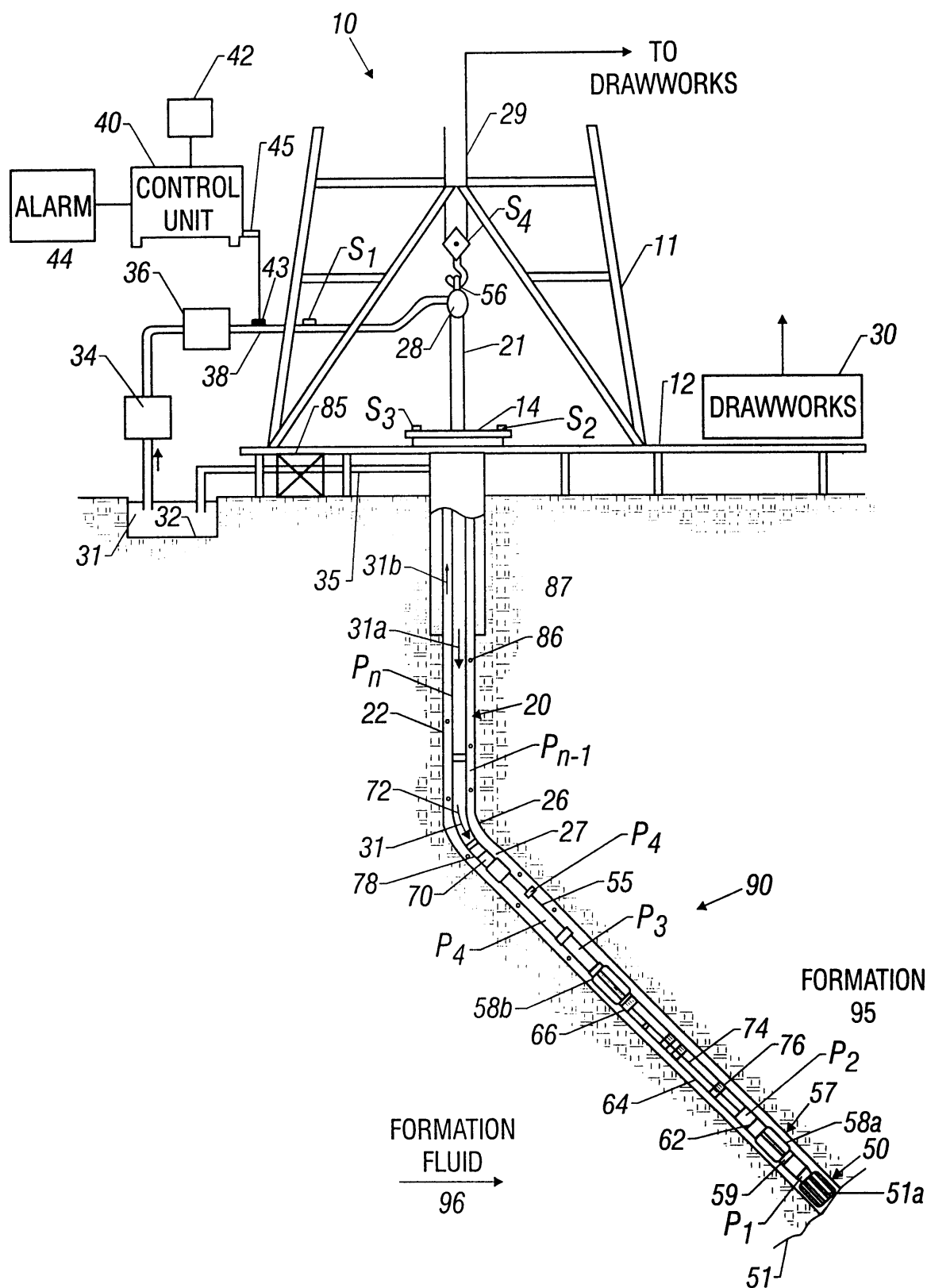
Family 19/20 - FAMPAT - ©Questel

Title

(WO9900575)

Drilling system with sensors for determining properties of drilling fluid downhole

Images



Publication numbers with kind code & date

US6176323	B1	2001-01-23	US6176323
WO99/00575	A3	1999-04-15	WO9900575
AU8164898	A	1999-01-19	AU9881648
WO99/00575	A2	1999-01-07	WO9900575



Abstract

(WO99/00575)

The present invention provides a drilling system for drilling oilfield boreholes or wellbores utilizing a drill string having a drilling assembly conveyed downhole by a tubing (usually a drill pipe or coiled tubing). The drilling assembly includes a bottom hole assembly (BHA) and a drill bit. The bottom hole assembly preferably contains commonly used measurement-

while-drilling sensors. The drill string also contains a variety of sensors for determining downhole various properties of the drilling fluid. Sensors are provided to determine density, viscosity, flow rate, clarity, compressibility, pressure and temperature of the drilling fluid at one or more downhole locations. Chemical detection sensors for detecting the presence of gas (methane) and H₂S are disposed in the drilling assembly. Sensors for determining fluid density, viscosity, pH, solid content, fluid clarity, fluid compressibility, and a spectroscopy sensor are also disposed in the BHA. Data from such sensors may be processed downhole and/or at the surface. Corrective actions are taken based upon the downhole measurements at the surface which may require altering the drilling fluid composition, altering the drilling fluid pump rate or shutting down the operation to clean wellbore. The drilling system contains one or more models, which may be stored in memory downhole or at the surface. These models are utilized by the downhole processor and the surface computer to determine desired fluid parameters for continued drilling. The drilling system is dynamic, in that the downhole fluid sensor data is utilized to update models and algorithms during drilling of the wellbore and the updated models are then utilized for continued drilling operations.

Inventors

WEIRICH JOHN B

BLAND RONALD G

SMITH WILLIAM W JR

KRUEGER VOLKER

HARRELL JOHN W

NASR HATEN N

PAPANYAN VALERI

Latest standardized assignees - inventors removed

BAKER HUGHES

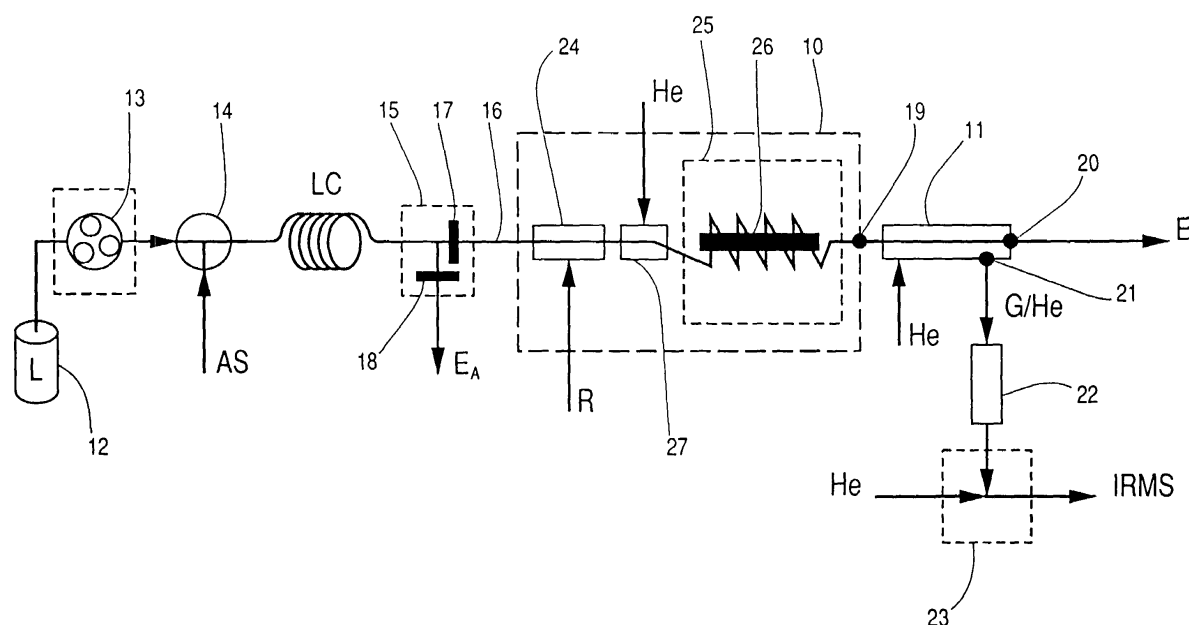
Family 20/20 - FAMPAT - ©Questel

Title

(US7213443)

Process and apparatus for providing gas for isotopic ratio analysis

Images



Publication numbers with kind code & date

DE10216975	B4	2007-10-18	DE10216975
US7213443	B2	2007-05-08	US7213443
GB2388800	B	2005-09-07	GB2388800
US20030226394	A1	2003-12-11	US20030226394



GB2388800	A	2003-11-26	GB2388800
DE10216975	A1	2003-11-06	DE10216975
GB0308768	D0	2003-05-21	GB200308768

**Abstract**

(US20030226394)

The invention relates to a process and to an apparatus for providing gas for isotopic ratio analysis. According to the invention, a gas is generated from an eluate of a liquid chromatograph (LC). Subsequently, the gas is separated from the eluate. Finally, the gas is fed to an instrument (IRMS) for isotopic ratio analysis.

Inventors

HILKERT ANDREAS

PESCH REINHOLD

Latest standardized assignees - inventors removed

BERN UNIVERSITY OF