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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/484,728	02/07/2023	11574372	91A-3US	1944

130443 7590 01/18/2023

Nissen Patent Law
#200, 10328- 81 Ave
Edmonton, ALBERTA T6E1X2
CANADA

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 729 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site http://pair.uspto.gov for additional inventors):

Stephen Barbour, Lloydminster, CANADA;

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Upstream Data Inc., Lloydminster, CANADA;

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16484728
Filing Date	2018-02-06
First Named Inventor	Stephen Barbour
Art Unit	
Examiner Name	
Attorney Docket Number	91A-3US

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
Change(s) applied to document, /S.D./ 1/5/2023	1	9967333		2018-05-08	~~Dell Products LP~~ Chen et al.	
	2	8305757		2012-11-06	~~Innertech IP LP~~ Keisling et al.	
	3	8254124		2012-08-28	Keisling et al.	
	4	8297067		2012-10-30	Keisling et al.	
	5	8601827		2013-12-10	Keisling et al.	
	6	9282684		2016-03-08	Keisling et al.	
	7	9763366		2017-09-12	Keisling et al.	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16484728
Filing Date	2019-08-08
First Named Inventor	Stephen Barbour
Art Unit	
Examiner Name	
Attorney Docket Number	91A-3US

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7542947		2009-06-02	Guyon, et al.	
	2	8156206		2012-04-10	Kiley, et al.	
	3	8483715		2013-07-09	Chen	
	4	9495668		2016-11-15	Juels	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20150261269		~~2017-06-13~~ 09/2015	Bruscoe	
	2	20150292303		2015-10-15	Dusseault, et al.	

Change(s) applied to document, /S.D./ 1/5/2023

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

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16/484,728	01/06/2020	Stephen Barbour	91A-3US	1944

130443 7590 01/06/2023

Nissen Patent Law
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Edmonton, ALBERTA T6E1X2
CANADA

EXAMINER	
REAGAN, JAMES A	

ART UNIT	PAPER NUMBER
3688	

MAIL DATE	DELIVERY MODE
01/06/2023	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Corrected ***Notice of Allowability***	**Application No.** 16/484,728	**Applicant(s)** Barbour, Stephen	
	Examiner JAMES A REAGAN	**Art Unit** 3688	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the amendment and response filed on 07/04/2022..
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-9,12-13 and 15-44 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JAMES A REAGAN/
Primary Examiner, Art Unit 3688

DETAILED ACTION

Status of Claims

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

This action is in reply to the amendment and response filed on **07/04/2022**.

Claims 1, 3, 5-9, 12, 13, 15, 16, 18-21, 23-29, 31, 33-38, and 40 have been amended.

Claims 42-44 have been added.

Claims 10, 11, 14, have been canceled.

Claims 1-9, 12, 13, and 15-44 are currently pending and have been examined.

Information Disclosure Statement

The Information Disclosure Statements filed **06/03/2022** and **074/04/2022** have been considered. Initialed copies of the Form 1449 are enclosed herewith.

Allowable Subject Matter

Claims 1-9, 12, 13, and 15-44 are allowed.

Reasons For Allowance

The following is an Examiner's statement of reasons for allowance:

With regard to any rejections under 35 USC § 101 based upon the Alice Corporation Pty. Ltd. v. CLS Bank guidelines, the Examiner finds that the claimed invention amounts to significantly more than a judicial exception or an abstract idea. Also, the claimed invention demonstrates a practical application. The specification clearly teaches and describes blockchain mining at hydrocarbon facility. Any rejections under 35 USC § 101 are hereby withdrawn Additionally, the 2019 PEG defines the phrase "integration into a practical application" to require an additional element(s) or a combination of additional elements in the claim to apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that it is more than a drafting effort designed to monopolize the exception. See MPEP 2106.04(d). I

With regard to the rejections under 35 USC § 103, the Examiner has carefully reviewed the Applicants responses filed on **07/04/2022**. Based upon the Applicants arguments and assertions, the Examiner is persuaded by and agrees with the Applicant. The assertions and arguments provided by the Applicant credibly declare and make clear that the independent claims and the limitations contained therein are allowable either in part or taken as a whole over the prior art of record. None of the art of record, taken individually or combination, disclose at least the method step or system components contained within the independent claims. Consequently, The prior art of record fails to fully disclose or reasonable teach the independent claims as a whole. See MPEP 1302.14. Moreover, even though the individual references applied in the prior art may teach each individual limitation sufficiently, there does not appear to be sufficient grounds for combining or modifying the prior art of record to adequately arrive at the claimed invention. See MPEP 2143.01.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Non Patent Literature:

- **YOUTUBE**. "Using Natural Gas To Mine Bitcoin With Matthew Lohstroh." (18 September 2019). Retrieved online 04/16/2022. https://www.youtube.com/watch?v=TYpsZzlevow
- **WayBack Machine**. "New Century Exploration." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220401000000*/https://www.newcenturyexp.com/
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- **YOUTUBE**. "Why is natural gas flared? What is the solution?" (23 July 2015). Retrieved online 04/17/2022. https://www.youtube.com/watch?v=4_vEUniOAs8

Foreign Art:

- **HANKE TIMO TOBIAS et al.** "BLOCK MINING METHODS AND APPARATUS." (WO 2015/077378 A1)
- **TAYLOR NINA**. "This New Monetary Innovation Method/process Using Crypto Currency Applies To And For Entities, Which Require An Income/revenue Producing Asset Using Any Form Of Named/renamed Crypto Currency, Using Any Form Of Blockchain/chain Process Using The Wallet Which Mints/Mines New Coin Assets." ((AU 2014/101324 A4)
- **TERRY GARY MCALISTER.** "New Stock/share/bond Innovation Using Principle Mined Cryptographic Currency/digital Mining Assets/commodities Which Secondary Mine For Stock/share/bond Holders On/using The Blockchain/any Chain/shared Ledger On A Cryptographic Currency/digital Mining Assets/commodities Exchange." (AU 2016/100178 A4)
- **MCALISTER GARY.** "Blockchain Digital Mining Asset/Commodity Innovation For Private Placement, High Yield Investment, Tier 1,2,3, MTN Buy/sell Structured Financial Trading Programs And Platforms." (AU 2016/100394 A4)

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **James A. Reagan** (james.reagan@uspto.gov) whose telephone number is **571.272.6710.** The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **KAMBIZ ABDI** can be reached at **571.272.6702**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://portal.uspto.gov/external/portal/pair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

Any response to this action should be mailed to:

Commissioner for Patents

PO Box 1450

Alexandria, Virginia 22313-1450

or faxed to **571-273-8300**.

Hand delivered responses should be brought to the **United States Patent and Trademark Office Customer Service Window**:

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401 Dulany Street

Alexandria, VA 22314.

/JAMES A REAGAN/
Primary Examiner, Art Unit 3688

james.reagan@uspto.gov
571.272.6710 (Office)
571.273.6710 (Desktop Fax)

Notice of References Cited	Application/Control No. 16/484,728	Applicant(s)/Patent Under Reexamination Barbour, Stephen	
	Examiner JAMES A REAGAN	Art Unit 3688	Page 1 of 4

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20200161865-A1	05-2020	Clifton; Eric Douglass	H02J7/0068	1/1
*	B	US-20180181153-A1	06-2018	TAKAHASHI; Hirotaka	G05F1/66	1/1
*	C	US-20190018394-A1	01-2019	Sayyarrodsari; Bijan	G06Q10/0833	1/1
*	D	US-20170349058-A1	12-2017	Bernier; Kevin T.	H02J3/14	1/1
*	E	US-20190267644-A1	08-2019	BERNTSEN; George P.	B60L50/72	1/1
*	F	US-20190122132-A1	04-2019	RIMINI; Noa	G06N7/005	1/1
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*	I	US-20180284707-A1	10-2018	Menon; Anup	F02C9/28	1/1
*	J	US-20170329908-A1	11-2017	Braswell; Anthony	G16H40/20	1/1
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*	N	AU-2014101324-A4	12-2014	AU	TAYLOR N	
*	O	WO-2015077378-A1	05-2015	WO	HANKE T	G06Q20/0655
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*	V	• WayBack Machine. "New Century Exploration." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220401000000*/https://www.newcenturyexp.com/ (Year: 2022)
*	W	• WayBack Machine. "New Century Exploration – What We Do." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220330234542/https://www.newcenturyexp.com/ (Year: 2022)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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	Examiner JAMES A REAGAN	Art Unit 3688	Page 2 of 4

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*	B	US-20180042064-A1	02-2018	Norton; Mark	H05B47/20	1/1
*	C	US-20170243290-A1	08-2017	Brown; Michael Sean	G06Q30/0202	1/1
*	D	US-9630614-B1	04-2017	Hill; William McGinley	F02B63/047	1/1
*	E	US-20150316903-A1	11-2015	Asmus; Matthew J.	G06Q10/06	700/291
*	F	US-20170302077-A1	10-2017	YABE; Masaaki	H02J3/005	1/1
*	G	US-20150012622-A1	01-2015	Omatsu; Fumio	G06Q10/10	709/220
*	H	US-20120185414-A1	07-2012	Pyle; Richard	G01W1/10	706/11
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*	D	US-8849469-B2	09-2014	Belady; Christian L.	G06Q30/04	700/297
*	E	US-20080135238-A1	06-2008	Cugnet; Matt	E21B41/005	166/256
*	F	US-20160261685-A1	09-2016	Chen; YuLing	H04W12/35	1/1
*	G	US-11163280-B2	11-2021	Henson; David	A01G9/26	1/1
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*	D	US-20180109541-A1	04-2018	Gleichauf; Paul Harry	H04W12/06	1/1
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*	F	US-20190306176-A1	10-2019	Gleichauf; Paul Harry	H04W12/10	1/1
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	Art Unit
	JAMES A REAGAN	3688

CPC - Searched*		
Symbol	**Date**	**Examiner**
(G06Q50/06 OR E21B41/00 OR F02M21/0209 OR F02M21/0218 OR G05B15/02 OR G06F16/2315 OR G06Q10/06313 OR H04L67/104 OR H04L67/1097 OR G06Q2220/00 OR H02J9/06 OR G06Q10/06).cpc. Further limited by keyword and text searching in PE2E Search Tool	04/17/2022	JAR
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* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	Art Unit
	JAMES A REAGAN	3688

Search Notes		
Search Notes	**Date**	**Examiner**
Reviewed IDS in PE2E Search Tool	04/17/2022	JAR
Inventor and Assignee name search in PE2E Search Tool	04/17/2022	JAR
Forward/Backward search in PE2E Search Tool	04/17/2022	JAR
PE2E Search Tool, GOOGLE, GOOGLE PATENTS, BING, DUCKDUCKGO, GOOGLE SCHOLAR, IP.COM, DIALOG	04/17/2022	JAR
Reviewed IDS in PE2E Search Tool	08/21/2022	JAR
Inventor and Assignee name search in PE2E Search Tool	08/21/2022	JAR
Forward/Backward search in PE2E Search Tool	08/21/2022	JAR
PE2E Search Tool, GOOGLE, GOOGLE PATENTS, BING, DUCKDUCKGO, GOOGLE SCHOLAR, IP.COM, DIALOG	08/21/2022	JAR

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
PE2E	Interference	08/21/2022	JAR

/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	**Art Unit**
	JAMES A REAGAN	3688

CPC						
Symbol					**Type**	**Version**
G06Q	/	50	/	06	F	2013-01-01
G06F	/	16	/	2315	I	2019-01-01
E21B	/	41	/	00	I	2013-01-01
F02M	/	21	/	0209	I	2013-01-01
F02M	/	21	/	0218	I	2013-01-01
G05B	/	15	/	02	I	2013-01-01
G06Q	/	10	/	06313	I	2013-01-01
H04L	/	67	/	104	I	2013-01-01
H04L	/	67	/	1097	I	2013-01-01
G06Q	/	2220	/	00	A	2013-01-01
H02J	/	9	/	06	A	2013-01-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE (Assistant Examiner) (Date)	**Total Claims Allowed:** 41	
/JAMES A REAGAN/ Primary Examiner, Art Unit 3688 (Primary Examiner) (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office Part of Paper No.: 20230104

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	**Art Unit**
	JAMES A REAGAN	3688

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G06Q	/	30	/	00	

NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE (Assistant Examiner) (Date)	**Total Claims Allowed:** 41	
/JAMES A REAGAN/ Primary Examiner, Art Unit 3688 (Primary Examiner) (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	**Art Unit**
	JAMES A REAGAN	3688

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	x	10	16	19	28	28	37	37						
2	2	x	11	17	20	29	29	38	38						
3	3	10	12	18	21	30	30	39	39						
4	4	11	13	19	22	31	31	40	40						
5	5	x	14	20	23	32	32	41	41						
6	6	12	15	24	24	33	33	21	42						
7	7	13	16	25	25	34	34	22	43						
8	8	14	17	27	26	35	35	23	44						
9	9	15	18	26	27	36	36								

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 41	
/JAMES A REAGAN/ Primary Examiner, Art Unit 3688 (Primary Examiner)	(Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office Part of Paper No.: 20230104

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: STEPHEN BARBOUR | Attorney Docket No.: 91A-3US

Application No.: 16/484,728 | Art Unit: 3688 / Confirmation No.: 1944

Filed: August 08, 2019 | Examiner: Reagan, James A

Title: BLOCKCHAIN MINE AT OIL OR GAS FACILITY

ISSUE FEE PAYMENT AND AMENDMENT AFTER ALLOWANCE UNDER CFR 1.312

September 12, 2022

TO THE COMMISSIONER FOR PATENTS:

INTRODUCTORY COMMENTS

In response to the notice of allowance dated August 31, 2022, Applicant submits the issue fee and an amendment after allowance under CFR 1.312. Specifically, Applicant requests that the patent office please amend the above identified application as follows:

Amendments to the Claims are reflected in the listing of the claims, which begins on page 2 of this paper.

Remarks/Arguments begin on page 10 of this paper.

OK TO ENTER: /J.A.R/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: STEPHEN BARBOUR | Attorney Docket No.: 91A-3US

Application No.: 16/484,728 | Art Unit: 3688 / Confirmation No.: 1944

Filed: August 08, 2019 | Examiner: Reagan, James A

Title: BLOCKCHAIN MINE AT OIL OR GAS FACILITY

ISSUE FEE PAYMENT AND AMENDMENT AFTER ALLOWANCE UNDER CFR 1.312

September 12, 2022

TO THE COMMISSIONER FOR PATENTS:

INTRODUCTORY COMMENTS

In response to the notice of allowance dated August 31, 2022, Applicant submits the issue fee and an amendment after allowance under CFR 1.312. Specifically, Applicant requests that the patent office please amend the above identified application as follows:

Amendments to the Claims are reflected in the listing of the claims, which begins on page 2 of this paper.

Remarks/Arguments begin on page 10 of this paper.

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A system comprising:

a source of combustible gas produced from a facility selected from a group consisting of a hydrocarbon production, storage, or processing facility;

a generator connected to the source of combustible gas to receive a continuous flow of combustible gas to power the generator; and

blockchain mining devices connected to the generator;

in which:

the blockchain mining devices each have a mining processor and are connected to a network interface;

the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;

the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database;

the network is a peer-to-peer network;

the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network; and

the blockchain database stores transactional information for a digital currency.

2. (Original) The system of claim 1 isolated from a sales gas line and an external electrical power grid.

3. (Previously presented) The system of claim 1 in which:

the source of combustible gas and the facility comprise a remote well selected from a group consisting of a remote oil or gas well; and

the remote well is connected to produce the continuous flow of combustible gas to power the generator.

4. (Original) The system of claim 3 further comprising a combustion engine connected to the source of combustible gas and connected to drive the generator.

5. (Previously presented) The system of claim 4 in which the combustion engine is a prime mover that is connected to produce oil from the remote well.

6. (Previously presented) The system of claim 4 in which the combustion engine is a first combustion engine, and further comprising a second combustion engine that is a prime mover that is connected to produce oil from the remote well.

7. (Previously presented) The system of claim 1 in which:

the facility comprises a unit selected from a group consisting of an oil storage or processing unit;

the source of combustible gas comprises the unit, which has a gas outlet connected to supply combustible gas to operate the generator; and

the unit is connected to receive oil produced from a remote oil well.

8. (Previously presented) The system of claim 1 in which the generator and blockchain mining devices are located adjacent to the facility.

9. (Previously presented) The system of claim 1 in which the facility comprises a plurality of remote wells selected from a group consisting of remote oil or gas wells, and one or both of the following conditions are satisfied:

the plurality of remote wells are located on a multi-well pad; or

the plurality of remote wells include a satellite well.

10-11. (Cancelled)

12. (Previously presented) The system of claim 1 in which the system is configured to modulate a power load level exerted by the blockchain mining devices on the generator, by increasing or decreasing the mining activity of the mining processor.

13. (Currently amended) The system of claim 12 in which the system is configured to modulate the ~~maximum~~ power load level by selecting one or more actions from a group of actions consisting of increasing or decreasing a maximum number of mining processors that are engaged in mining transactions.

14. (Cancelled)

15. (Currently amended) The system of claim [[13]] 12 in which the system is configured to modulate the power load level in response to variations in a production rate of combustible gas from the ~~remote well~~ hydrocarbon production well, storage, or processing facility.

16. (Currently amended) The system of claim [[13]]12 in which:

a production rate of combustible gas from the ~~remote well~~ hydrocarbon production well, storage, or processing facility varies between a daily minimum production rate and a daily maximum production rate; and

while the production rate is above the daily minimum production rate, the controller is set to limit the power load level to at or below a power level producible by the generator when the production rate is at the daily minimum production rate.

17. (Original) The system of claim 16 in which the controller is set to divert to a load bank excess electricity produced by the generator.

18. (Currently amended) The system of claim [[13]] 12 in which:

a production rate of combustible gas from the ~~remote well~~ hydrocarbon production well, storage, or processing facility varies between a daily minimum production rate and a daily maximum production rate;

the controller is set to limit the power load level to above a power level producible by the generator when the production rate is at the daily minimum production rate; and

a backup source, selected from a group consisting of fuel or electricity, is connected make up a shortfall in fuel or electricity, respectively, required to supply the blockchain mining devices with the power load level.

19. (Previously presented) The system of claim 1 in which a controller is connected to operate a cooling system to maintain the blockchain mining devices within a predetermined operating range of temperature.

20. (Previously presented) The system of claim 1 in which the blockchain mining devices are housed in a portable enclosure that is structured to one or more of form a skid or be mounted on a trailer.

21. (Previously presented) The system of claim 20 in which the portable enclosure comprises a generator driven by an engine, which is connected to the source of combustible gas.

22. (Original) The system of any claim 21 in which the engine comprises a turbine.

23. (Previously presented) The system of claim 20 in which the portable enclosure comprises an intermodal transport container.

24. (Previously presented) A method comprising:

producing electricity using a generator and a source of combustible gas produced at a facility selected from the group consisting of a hydrocarbon production well, storage, or processing facility, and operating blockchain mining devices located at the facility, respectively, using the electricity, in which:

the generator is connected to the source of combustible gas, in which the facility is connected to produce a continuous flow of combustible gas to power the generator;

the blockchain mining devices each have a mining processor and are connected to a network interface;

the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;

the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database;

the network is a peer-to-peer network;

the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network; and

the blockchain database stores transactional information for a digital currency.

25. (Previously presented) The method of claim 24 further comprising, prior to using the source of combustible gas:

one or both disconnecting or diverting the source of combustible gas from a combustible gas disposal device at the facility; and

connecting the source of combustible gas to operate the blockchain mining devices.

26. (Previously presented) The method of claim 24 further comprising:

connecting the source of combustible gas to operate the blockchain mining devices; and

diverting gas from a combustible gas disposal device to operate the blockchain mining devices.

27. (Previously presented) The method of claim 25 in which the combustible gas disposal device comprises one or more of a flare, a vent to the atmosphere, an incinerator, or a burner.

28. (Previously presented) The method of claim 24 in which the facility is selected from a group consisting of an oil or gas well that is isolated from a sales gas line and an external electrical power grid.

29. (Previously presented) The method of claim 24 in which the source of combustible gas is a remote well selected from a group consisting of a remote oil or gas well.

30. (Currently amended) The method of claim [[29]] 24 in which producing further comprises supplying combustible gas to a combustion engine that is connected to drive the generator.

31. (Currently amended) The method of claim [[30]] 24, in which producing further comprises supplying combustible gas to a combustion engine that is connected to drive the generator, and further comprising using the combustion engine as a prime mover to produce oil from the ~~remote well~~ hydrocarbon production well, storage, or processing facility.

32. (Original) The method of claim 31 in which, prior to using the source of combustible gas, the combustion engine is under loaded as the prime mover, and further comprising connecting the generator to a power takeoff connected to the combustion engine.

33. (Previously presented) The method of claim 30 in which the combustion engine is a first combustion engine, the remote well is a remote oil well, and further comprising:

prior to supplying combustible gas to the first combustion engine, connecting the first combustion engine to receive combustible gas from the remote oil well; and

using a second combustion engine as a prime mover to produce oil from the remote oil well.

34. (Previously presented) The method of claim 29 further comprising operating the blockchain mining devices to:

mine transactions with the blockchain mining devices; and

communicate wirelessly through the internet to communicate with a blockchain database.

35. (Previously presented) The method of claim 34 further comprising modulating a power load level exerted by the blockchain mining devices on the generator, by selecting an action from

a group of actions consisting of increasing or decreasing, a mining activity of the blockchain mining devices.

36. (Previously presented) The method of claim 35 in which:

modulating comprises modulating the power load level by increasing or decreasing a maximum number of mining processors that are engaged in mining transactions.

37. (Currently amended) The method of claim 36 in which modulating comprises modulating the power load level in response to variations in a production rate of combustible gas from the ~~remote well~~ hydrocarbon production well, storage, or processing facility.

38. (Currently amended) The method of claim 35 in which:

a production rate of combustible gas from the ~~remote well~~ hydrocarbon production well, storage, or processing facility varies between a daily minimum production rate and a daily maximum production rate; and

modulating comprises limiting, while the production rate is above the daily minimum production rate, the power load level to at or below a power level producible by the generator when the production rate is at the daily minimum production rate.

39. (Original) The method of claim 38 further comprising diverting to a load bank excess electricity produced by the generator.

40. (Currently amended) The method of claim 35 in which:

a production rate of combustible gas from the ~~remote well~~ hydrocarbon production well, storage, or processing facility varies between a daily minimum production rate and a daily maximum production rate;

modulating comprises limiting the power load level to above a power level produced by the generator when the production rate is at the daily minimum production rate; and

supplying from a backup source, which is selected from a group consisting of a backup fuel or electricity source, a shortfall in fuel or electricity, respectively, required to supply the blockchain mining devices with the power load level.

41. (Original) The method of claim 40 in which the power load level is limited to above a power level produced by the generator when the production rate is at the daily maximum production rate.

42. (Previously presented) The system of claim 20 in which the portable enclosure has the form of a box with walls, a top, and a base, with one or more access doors formed in the walls.

43. (Previously presented) The system of claim 1 further comprising a combustible gas disposal device, at the facility, the combustible gas disposal device being connected to receive combustible gas from the source of combustible gas.

44. (Previously presented) The system of claim 43 further comprising a valve connected upstream of the generator to receive the continuous flow of gas from the source of combustible gas, and selectively supply the continuous flow of gas to the generator, the combustible gas disposal device, or both the generator and the combustible gas disposal device, to selectively divert the continuous flow of gas to the combustible gas disposal device, the generator, or both the generator and the combustible gas disposal device, respectively.

REMARKS

This amendment is made to clarify wording within several of the dependent claims in the claim set. The amendments are explained in further detail below. The amendment is disclosed in and supported by the application, and does not change the scope of the independent claims. The proposed changes require no additional search or examination, and are patentable.

Amendments to the Claims

Claim 13 is amended to relax the word "maximum" to avoid antecedent issues and as supported by the application as filed, for example para. 71.

The dependencies of Claims 15, 16, 18, 30, and 31 are amended for clarity.

Claims 15, 16, 18, 37, 38, and 40, are amended to relax the remote well to hydrocarbon production well, storage, or processing facility, as supported by the application as filed, for example paras. 71 (discusses power modulation based on varying gas supply levels provided by a remote well or hydrocarbon production, storage, or processing facility), and 72-75.

Claim 31 is also amended to relax the remote well to hydrocarbon production well, storage or processing facility, as supported by the application as filed, for example paras. 8, 12, and 42-43.

CONCLUSION

Applicant submits the required fees for issuance herewith. Issuance of the application with the amended claims is respectfully requested.

September 12, 2022

Respectfully submitted,

/robertnissen#64256/

_____

Robert A. Nissen
Agent of Record
Registration no. 64,256
Customer no. 130443
Telephone 780-802-7904

Electronic Patent Application Fee Transmittal

Application Number:	16484728
Filing Date:	06-Jan-2020
Title of Invention:	BLOCKCHAIN MINE AT OIL OR GAS FACILITY
First Named Inventor/Applicant Name:	Stephen Barbour
Filer:	Robert Anton Nissen/Matthew Froehlick
Attorney Docket Number:	91A-3US

Filed as Small Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**600**

Electronic Acknowledgement Receipt	
EFS ID:	46596058
Application Number:	16484728
International Application Number:	
Confirmation Number:	1944
Title of Invention:	BLOCKCHAIN MINE AT OIL OR GAS FACILITY
First Named Inventor/Applicant Name:	Stephen Barbour
Customer Number:	130443
Filer:	Robert Anton Nissen/Matthew Froehlick
Filer Authorized By:	Robert Anton Nissen
Attorney Docket Number:	91A-3US
Receipt Date:	12-SEP-2022
Filing Date:	06-JAN-2020
Time Stamp:	17:09:33
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$600
RAM confirmation Number	E20229BH10140048
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	91A-3US_Fee_transmittal.pdf	83646 bde3ed8d3594a0f140063b26290f0235c3617384	no	1
Warnings:					
Information:					
2		91A-3US_amendment_after_allowance.pdf	97559 ba8213afdc8ba07bb63f5b535ad1580093087ed1	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment after Notice of Allowance (Rule 312)	1	1
	Claims	2	9
	Applicant Arguments/Remarks Made in an Amendment	10	10

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	38305 7fb9bf5115798933b6af88be9492d5232002e9e5	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	219510		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

130443 7590 08/31/2022

Nissen Patent Law
#200, 10328- 81 Ave
Edmonton, ALBERTA T6E1X2
CANADA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/484,728	01/06/2020	Stephen Barbour	91A-3US	1944

TITLE OF INVENTION: BLOCKCHAIN MINE AT OIL OR GAS FACILITY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	11/30/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
REAGAN, JAMES A	3688	705-063000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Robert A. Nissen
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Upstream Data Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Llyodminster, Canada

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ☒ Corporation or other private group entity ❑ Government

4a. Fees submitted: ☒ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☒ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

☒ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature //RobertNissen#64256// Date September 12, 2022

Typed or printed name Robert A. Nissen Registration No. 64256

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NOTICE OF ALLOWANCE AND FEE(S) DUE

130443 7590 08/31/2022

Nissen Patent Law
#200, 10328- 81 Ave
Edmonton, ALBERTA T6E1X2
CANADA

EXAMINER
REAGAN, JAMES A

ART UNIT	PAPER NUMBER
3688	

DATE MAILED: 08/31/2022

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/484,728	01/06/2020	Stephen Barbour	91A-3US	1944

TITLE OF INVENTION: BLOCKCHAIN MINE AT OIL OR GAS FACILITY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	11/30/2022

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

130443 7590 08/31/2022

Nissen Patent Law
#200, 10328- 81 Ave
Edmonton, ALBERTA T6E1X2
CANADA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/484,728	01/06/2020	Stephen Barbour	91A-3US	1944

TITLE OF INVENTION: BLOCKCHAIN MINE AT OIL OR GAS FACILITY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	11/30/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
REAGAN, JAMES A	3688	705-063000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required) ❑Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/484,728	01/06/2020	Stephen Barbour	91A-3US	1944

130443 7590 08/31/2022

Nissen Patent Law
#200, 10328- 81 Ave
Edmonton, ALBERTA T6E1X2
CANADA

EXAMINER	
REAGAN, JAMES A	
ART UNIT	PAPER NUMBER
3688	

DATE MAILED: 08/31/2022

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	**Application No.** 16/484,728	**Applicant(s)** Barbour, Stephen	
	Examiner JAMES A REAGAN	**Art Unit** 3688	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the amendment and response filed on 07/04/2022..
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-9,12-13 and 15-44 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 06/03/2022 and 074/04/2022.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JAMES A REAGAN/
Primary Examiner, Art Unit 3688

DETAILED ACTION

Status of Claims

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

This action is in reply to the amendment and response filed on **07/04/2022**.

Claims 1, 3, 5-9, 12, 13, 15, 16, 18-21, 23-29, 31, 33-38, and 40 have been amended.

Claims 42-44 have been added.

Claims 10, 11, 14, have been canceled.

Claims 1-9, 12, 13, and 15-44 are currently pending and have been examined.

Information Disclosure Statement

The Information Disclosure Statements filed **06/03/2022** and **074/04/2022** have been considered. Initialed copies of the Form 1449 are enclosed herewith.

Allowable Subject Matter

Claims 1-9, 12, 13, and 15-44 are allowed.

Reasons For Allowance

The following is an Examiner's statement of reasons for allowance:

With regard to any rejections under 35 USC § 101 based upon the Alice Corporation Pty. Ltd. v. CLS Bank guidelines, the Examiner finds that the claimed invention amounts to significantly more than a judicial exception or an abstract idea. Also, the claimed invention demonstrates a practical application. The specification clearly teaches and describes blockchain mining at hydrocarbon facility. Any rejections under 35 USC § 101 are hereby withdrawn Additionally, the 2019 PEG defines the phrase "integration into a practical application" to require an additional element(s) or a combination of additional elements in the claim to apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that it is more than a drafting effort designed to monopolize the exception. See MPEP 2106.04(d). I

With regard to the rejections under 35 USC § 103, the Examiner has carefully reviewed the Applicants responses filed on **07/04/2022**. Based upon the Applicants arguments and assertions, the Examiner is persuaded by and agrees with the Applicant. The assertions and arguments provided by the Applicant credibly declare and make clear that the independent claims and the limitations contained therein are allowable either in part or taken as a whole over the prior art of record. None of the art of record, taken individually or combination, disclose at least the method step or system components contained within the independent claims. Consequently, The prior art of record fails to fully disclose or reasonable teach the independent claims as a whole. See MPEP 1302.14. Moreover, even though the individual references applied in the prior art may teach each individual limitation sufficiently, there does not appear to be sufficient grounds for combining or modifying the prior art of record to adequately arrive at the claimed invention. See MPEP 2143.01.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Non Patent Literature:

- **YOUTUBE**. "Using Natural Gas To Mine Bitcoin With Matthew Lohstroh." (18 September 2019). Retrieved online 04/16/2022. https://www.youtube.com/watch?v=TYpsZzlevow
- **WayBack Machine**. "New Century Exploration." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220401000000*/https://www.newcenturyexp.com/
- **WayBack Machine**. "New Century Exploration – What We Do." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220330234542/https://www.newcenturyexp.com/
- **YOUTUBE**. "Why is natural gas flared? What is the solution?" (23 July 2015). Retrieved online 04/17/2022. https://www.youtube.com/watch?v=4_vEUniOAs8

Foreign Art:

- **HANKE TIMO TOBIAS et al.** "BLOCK MINING METHODS AND APPARATUS." (WO 2015/077378 A1)
- **TAYLOR NINA**. "This New Monetary Innovation Method/process Using Crypto Currency Applies To And For Entities, Which Require An Income/revenue Producing Asset Using Any Form Of Named/renamed Crypto Currency, Using Any Form Of Blockchain/chain Process Using The Wallet Which Mints/Mines New Coin Assets." ((AU 2014/101324 A4)
- **TERRY GARY MCALISTER.** "New Stock/share/bond Innovation Using Principle Mined Cryptographic Currency/digital Mining Assets/commodities Which Secondary Mine For Stock/share/bond Holders On/using The Blockchain/any Chain/shared Ledger On A Cryptographic Currency/digital Mining Assets/commodities Exchange." (AU 2016/100178 A4)
- **MCALISTER GARY.** "Blockchain Digital Mining Asset/Commodity Innovation For Private Placement, High Yield Investment, Tier 1,2,3, MTN Buy/sell Structured Financial Trading Programs And Platforms." (AU 2016/100394 A4)

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **James A. Reagan** (james.reagan@uspto.gov) whose telephone number is **571.272.6710.** The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **KAMBIZ ABDI** can be reached at **571.272.6702**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://portal.uspto.gov/external/portal/pair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

Any response to this action should be mailed to:

Commissioner for Patents

PO Box 1450

Alexandria, Virginia 22313-1450

or faxed to **571-273-8300**.

Hand delivered responses should be brought to the **United States Patent and Trademark Office Customer Service Window**:

Randolph Building

401 Dulany Street

Alexandria, VA 22314.

/JAMES A REAGAN/
Primary Examiner, Art Unit 3688

james.reagan@uspto.gov
571.272.6710 (Office)
571.273.6710 (Desktop Fax)

Notice of References Cited	Application/Control No. 16/484,728	Applicant(s)/Patent Under Reexamination Barbour, Stephen	
	Examiner JAMES A REAGAN	Art Unit 3688	Page 1 of 4

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20200161865-A1	05-2020	Clifton; Eric Douglass	H02J7/0068	1/1
*	B	US-20180181153-A1	06-2018	TAKAHASHI; Hirotaka	G05F1/66	1/1
*	C	US-20190018394-A1	01-2019	Sayyarrodsari; Bijan	G06Q10/0833	1/1
*	D	US-20170349058-A1	12-2017	Bernier; Kevin T.	H02J3/14	1/1
*	E	US-20190267644-A1	08-2019	BERNTSEN; George P.	B60L50/72	1/1
*	F	US-20190122132-A1	04-2019	RIMINI; Noa	G06N7/005	1/1
*	G	US-20170302171-A1	10-2017	GOTO; Kazuya	G05B15/02	1/1
*	H	US-20170207629-A1	07-2017	SEKI; Akira	G05B15/02	1/1
*	I	US-20180284707-A1	10-2018	Menon; Anup	F02C9/28	1/1
*	J	US-20170329908-A1	11-2017	Braswell; Anthony	G16H40/20	1/1
*	K	US-20170352010-A1	12-2017	SON; Jong Duk	G06Q10/20	1/1
*	L	US-20170169344-A1	06-2017	Mangharam; Rahul	G06N5/025	1/1
*	M	US-20180152023-A1	05-2018	Guruprasad; Ranjini B.	H02J3/38	1/1

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
*	N	AU-2014101324-A4	12-2014	AU	TAYLOR N	
*	O	WO-2015077378-A1	05-2015	WO	HANKE T	G06Q20/0655
*	P	AU-2016100178-A4	03-2016	AU	TERRY G M	
*	Q	AU-2016100394-A4	05-2016	AU	MCALISTER G	
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
*	U	• YOUTUBE. "Using Natural Gas To Mine Bitcoin With Matthew Lohstroh." (18 September 2019). Retrieved online 04/16/2022. https://www.youtube.com/watch?v=TYpsZzlevow (Year: 2019)
*	V	• WayBack Machine. "New Century Exploration." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220401000000*/https://www.newcenturyexp.com/ (Year: 2022)
*	W	• WayBack Machine. "New Century Exploration – What We Do." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220330234542/https://www.newcenturyexp.com/ (Year: 2022)
*	X	• YOUTUBE. "Why is natural gas flared? What is the solution?" (23 July 2015). Retrieved online 04/17/2022. https://www.youtube.com/watch?v=4_vEUnlOAs8 (Year: 2015)

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 16/484,728	Applicant(s)/Patent Under Reexamination Barbour, Stephen	
	Examiner JAMES A REAGAN	Art Unit 3688	Page 2 of 4

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20180351367-A1	12-2018	KOGO; Takuma	G05B19/042	1/1
*	B	US-20180042064-A1	02-2018	Norton; Mark	H05B47/20	1/1
*	C	US-20170243290-A1	08-2017	Brown; Michael Sean	G06Q30/0202	1/1
*	D	US-9630614-B1	04-2017	Hill; William McGinley	F02B63/047	1/1
*	E	US-20150316903-A1	11-2015	Asmus; Matthew J.	G06Q10/06	700/291
*	F	US-20170302077-A1	10-2017	YABE; Masaaki	H02J3/005	1/1
*	G	US-20150012622-A1	01-2015	Omatsu; Fumio	G06Q10/10	709/220
*	H	US-20120185414-A1	07-2012	Pyle; Richard	G01W1/10	706/11
*	I	US-20140324237-A1	10-2014	Oe; Ryuji	G06Q40/00	700/287
*	J	US-20130138468-A1	05-2013	OE; Ryuji	G06Q50/06	705/7.22
*	K	US-20100332272-A1	12-2010	Ong; Jiun Keat	F03D17/00	705/7.36
*	L	US-20100319747-A1	12-2010	Wong; Mark Y.	H01L35/30	136/201
*	M	US-20020120412-A1	08-2002	Hayashi, Yoshiharu	H02J3/00	702/61

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 16/484,728	Applicant(s)/Patent Under Reexamination Barbour, Stephen	
	Examiner JAMES A REAGAN	Art Unit 3688	Page 3 of 4

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20190063252-A1	02-2019	Spears; Christopher Steele	H05K7/1498	1/1
*	B	US-20190042990-A1	02-2019	Paul; Topon	G06Q10/0637	1/1
*	C	US-20140096837-A1	04-2014	Belady; Christian L.	F16L55/0333	138/26
*	D	US-8849469-B2	09-2014	Belady; Christian L.	G06Q30/04	700/297
*	E	US-20080135238-A1	06-2008	Cugnet; Matt	E21B41/005	166/256
*	F	US-20160261685-A1	09-2016	Chen; YuLing	H04W12/35	1/1
*	G	US-11163280-B2	11-2021	Henson; David	A01G9/26	1/1
*	H	US-10367353-B1	07-2019	McNamara; Michael T.	G06F1/3206	1/1
*	I	US-20200073466-A1	03-2020	Walsh; Sean	G06Q20/127	1/1
*	J	US-20200341439-A1	10-2020	Valin; David	H02S40/44	1/1
*	K	US-20200395761-A1	12-2020	Walsh; Sean	H02J3/381	1/1
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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 16/484,728	Applicant(s)/Patent Under Reexamination Barbour, Stephen	
	Examiner JAMES A REAGAN	Art Unit 3688	Page 4 of 4

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
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*	B	US-20150337218-A1	11-2015	Ricotta; Joseph A.	C10G53/02	208/187
*	C	US-20170358041-A1	12-2017	Forbes, Jr.; Joseph W.	H02J3/008	1/1
*	D	US-20180109541-A1	04-2018	Gleichauf; Paul Harry	H04W12/06	1/1
*	E	US-10291627-B2	05-2019	Gleichauf; Paul Harry	H04W12/06	1/1
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*	H	US-7525207-B2	04-2009	Clidaras; Jimmy	F03B13/20	290/43
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*	K	US-8683823-B1	04-2014	Shivers, III; Robert Magee	F25J1/0283	114/230.17
*	L	US-9493216-B2	11-2016	Scott; Edward	F17C9/00	1/1
*	M	US-20150321739-A1	11-2015	Dehlsen; James G.P.	B63G8/001	165/45

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	Art Unit
	JAMES A REAGAN	3688

CPC - Searched*		
Symbol	**Date**	**Examiner**
(G06Q50/06 OR E21B41/00 OR F02M21/0209 OR F02M21/0218 OR G05B15/02 OR G06F16/2315 OR G06Q10/06313 OR H04L67/104 OR H04L67/1097 OR G06Q2220/00 OR H02J9/06 OR G06Q10/06).cpc. Further limited by keyword and text searching in PE2E Search Tool	04/17/2022	JAR
(G06Q50/06 OR E21B41/00 OR F02M21/0209 OR F02M21/0218 OR G05B15/02 OR G06F16/2315 OR G06Q10/06313 OR H04L67/104 OR H04L67/1097 OR G06Q2220/00 OR H02J9/06 OR G06Q10/06).cpc. Further limited by keyword and text searching in PE2E Search Tool	08/21/2022	JAR

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	Art Unit
	JAMES A REAGAN	3688

Search Notes		
Search Notes	**Date**	**Examiner**
Reviewed IDS in PE2E Search Tool	04/17/2022	JAR
Inventor and Assignee name search in PE2E Search Tool	04/17/2022	JAR
Forward/Backward search in PE2E Search Tool	04/17/2022	JAR
PE2E Search Tool, GOOGLE, GOOGLE PATENTS, BING, DUCKDUCKGO, GOOGLE SCHOLAR, IP.COM, DIALOG	04/17/2022	JAR
Reviewed IDS in PE2E Search Tool	08/21/2022	JAR
Inventor and Assignee name search in PE2E Search Tool	08/21/2022	JAR
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PE2E Search Tool, GOOGLE, GOOGLE PATENTS, BING, DUCKDUCKGO, GOOGLE SCHOLAR, IP.COM, DIALOG	08/21/2022	JAR

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
PE2E	Interference	08/21/2022	JAR

/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	**Art Unit**
	JAMES A REAGAN	3688

CPC						
Symbol					**Type**	**Version**
G06Q	/	50	/	06	F	2013-01-01
G06F	/	16	/	2315	I	2019-01-01
E21B	/	41	/	00	I	2013-01-01
F02M	/	21	/	0209	I	2013-01-01
F02M	/	21	/	0218	I	2013-01-01
G05B	/	15	/	02	I	2013-01-01
G06Q	/	10	/	06313	I	2013-01-01
H04L	/	67	/	104	I	2013-01-01
H04L	/	67	/	1097	I	2013-01-01
G06Q	/	2220	/	00	A	2013-01-01
H02J	/	9	/	06	A	2013-01-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	41	
/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	22 August 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20220821

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	**Art Unit**
	JAMES A REAGAN	3688

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G06Q	/	30	/	00	

NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	41	
/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	22 August 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20220821

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/484,728	Barbour, Stephen
	Examiner	**Art Unit**
	JAMES A REAGAN	3688

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	x	10	16	19	28	28	37	37						
2	2	x	11	17	20	29	29	38	38						
3	3	10	12	18	21	30	30	39	39						
4	4	11	13	19	22	31	31	40	40						
5	5	x	14	20	23	32	32	41	41						
6	6	12	15	24	24	33	33	21	42						
7	7	13	16	25	25	34	34	22	43						
8	8	14	17	27	26	35	35	23	44						
9	9	15	18	26	27	36	36								

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	41	
/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	22 August 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office Part of Paper No.: 20220821

Bibliographic Data

Application No: 16/484,728

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /JAMES A REAGAN/ (Examiner's Signature) | (Initials)

Title: BLOCKCHAIN MINE AT OIL OR GAS FACILITY

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
01/06/2020	705	3688	91A-3US
RULE			

APPLICANTS

Upstream Data Inc., Lloydminster, CANADA

INVENTORS

Stephen Barbour, Lloydminster, CANADA

CONTINUING DATA

This application is a 371 of PCT/CA2018/050135 02/06/2018

PCT/CA2018/050135 has PRO of 62456380 02/08/2017

FOREIGN APPLICATIONS

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Patents (bitcoin blockchain mining oil field natural gas flare waste) before:pri

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System and Method for Oil and Condensate Processing

US · US20180274347A1 · Joseph A. Riotto · KATA Systems LLC

Priority 2014-05-20 · Filed 2018-05-25 · Published 2018-09-27

A system and method for the on-site separating and treating of a hydrocarbon liquid stream at an oil and gas production site is disclosed. The system comprises an oil and condensate distillation unit and a vapor recovery unit. In one embodiment, the oil and condensate distillation unit operates at ...

Naturalist smellscapes and environmental justice

Google Scholar · www.academia.edu · Hsu H · American Literature

Published 2016

... Although Norris only mentions this art studio's **gas** leak in ... unit for comparison or a common **field** within which to arrange ... with the stronger odours of linseed **oil** and sour, stale French ...

Crazy in Berlin: a novel

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Global dynamics and key trends

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... Other pioneers in the **field** include Fujitsu FEELthym , a ... to track **bitcoin**, the Internet-based currency, but has **natural** ... the biggest consumer of **oil** and to have a larger **gas** market than the ...

General environmental hazards in agriculture communities

Google Scholar · scholar.google.com · Donham K · Agricultural Medicine

Published 2016

Politics of the Imagination: The Life, Work and Ideas of Charles Fort

Google Scholar · books.google.com · Bennett C

Published 2009

... Our world has two sets of **natural** laws. One set tells us ... many such incidents occur in any **field**, they are still nowhere ... reference, does not see "**gas** lights and kerosene lamps and electric ...

Michael Watts

Google Scholar · repub.eur.nl · Arsel M · Development and Change

Published 2009

... National **oil** production (crude and **natural gas** liquids) is ... massive Bonga **oil field** --- Nigeria's largest **oil field**, lying within ... of the world **flare** emissions -- after a half century of **oil** and **gas** ...

Sustainable manure management

Google Scholar · sprints.nwisrl.ars.usda.gov · Leytem A · Sustainable animal agriculture
Published 2013
... in the production of pyrolysis **oil** and a low-BTU **gas**), gasification (... it for energy generation or **flare** the CH4 help mitigate this ... Anaerobic digestion is a **natural** biological process by which ...

Plain Talk About Drinking Water

Google Scholar · books.google.com · Symons J
Published 2011
... find related information, 3) details about **natural** chemicals found in source waters, and 4) a ... it'sa **gas** that turns to liquid when it touches cold air. In liquid form, it defies gravity. It's one of ...

Escaping God's Closet: The Revelations of a Queer Priest

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Published 2012
... that what I did with it was **natural** but forbidden, did not sit well ... My father would pick up his **gas** mask and a black steel ... It was, we later learned, an air mine that, following the **flare**, had ...

Daybreak Zero

Google Scholar · scholar.google.com · Barnes J
Published 2011

Operation Shakespeare: The True Story of an Elite International Sting

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Published 2014
... sudden insurgent signals: a **flare** launch, blinking lights from a ... accompany undercover agents into the **field**, an unusual trait ... 500,000 injectors of a nerve **gas** antidote to the Iraqi army. A ...

Ground Up: A Novel

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Published 2009

Major On-going Cases with Information Concealment Practice

Google Scholar · link.springer.com · Chernov D · Man-made Catastrophes and Risk Information Concealment
Published 2016
... of **natural gas** before 2020 7 and net exporter of **oil** and **gas** ... of shale **oil** from depleted conventional fields) to **flare** around ... recoverable from a potential **oil** or **gas field**--estimates made ...

Relationship Between Minerals and Human

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... **mining** from the depths under the land and even seabed. ... **Oil** is indispensible for transportation and **natural gas** is ... Since around 1960, there has been a revolution in the **field** of various ...

Factors influencing the development and reform of the upstream **oil** and **gas** fiscal systems in the UK and Nigeria--a comparative study

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Published 2003
... , is a royalty/tax system operated on a **field** by **field** basis. This requires a high level of expertise on ... However, the story of Nigeria's **natural gas** reserves is rather different (and deserves a ...

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Published 1977
... shale in the laboratory to determine **oil**, **gas**, and spent shale ... -bearing formations that have enough **natural** permf abili ty. ... of a small central portion of such a **field**, in which ignition and ...

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Published 1994
... we look out and we see the **natural** world and we know what it is ... Although we **field**-check trips every few years, conditions ... alarms); the common highway **flare** used by motorists has also ...

Unwanted guest

Google Scholar ▸ commons.emich.edu ▸ Mitts A
Published 2014
... Armor thins to solar **flare** seething purple burst Thirst, fugitive morsel drifting violet lagoon Barnacle me, my ... mutually hollow trading a sudden **flare** from solar cavities slowly merging ...

The education of Green Lantern: culture and ideology

Google Scholar ▸ search.proquest.com ▸ Moore J ▸ The Journal of American Culture
Published 2003
... Lantern is temporarily rendered powerless by the **gas** fumes from canisters being ... **oil** on those deboarding the plane. Senator Jeremiah Clutcher's face is covered with the thick, black **oil**. ...

Economic Evaluation of Magnesite Deposits of Khuzdar, Balochistan, Pakistan

Google Scholar ▸ www.uok.edu.pk ▸ Bashir E ▸ Karachi University Journal of Science
Published 2008
... Minerals are one of the principal **natural** resources essential for ... Recently the **mining** activities are increased but their exact ... and logistic support during **field** work. We sincerely thank the ...

Tag Archives: France

Google Scholar ▸ theoriboi.wordpress.com ▸ al-Qathafi M ▸ The New York Times
Published 2003
... **Field**, the biggest American air base outside the United States. Even the exploitation of vast **oil** ... the Mediterranean Sea, and the **mining** of **natural gas** discovered in the Syrian territory ...

Best of the West 2011: New Stories from the Wide Side of the Missouri

Google Scholar ▸ books.google.com ▸ Thomas J
Published 2011
... memories of the time he was once held up at a **gas** station. ... cyanide and arsenic heap-leach **mining**--past the charred and ... at a time, reclearing the **field** each spring and summer while ...

TIMES

Google Scholar ▸ www.queenstimes.com ▸ Schirmer U
Published 1965
... that the United States will ban imports of Russian **oil**, **natural gas**, and coal, New York Attorney Letitia James warned **oil** companies and **gas** stations that price gouging is illegal and ...

Ford at Trafford Park

Google Scholar ▸ search.proquest.com ▸ McIntosh I ▸ PQDT-Global
Published 1992
... within the context of industrial capitalism:the **natural** counterpart to 'mass production'. ... of steam and **gas** engines, steam turbines and every product of electrical engineering.Themain ...

The Appalachian Trail hiker: Trail-proven advice for hikes of any length

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Published 2004

Cosmonaut Keep

Google Scholar ▸ scholar.google.com ▸ MacLeod K
Published 2002

Don du sang à Melle

Google Scholar ▸ blogs.paysmellois.org ▸ Vergnault J
Published 2012
G., they will be able to play them in the living room at no additional cost. Most of the application can be downloaded free of cost and to make game lovers it's like a cherry on the food. ...

Kingdoms of experience: Everest, the unclimbed ridge

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An X-Ray into the Exo-Prosthetic Superbody

Google Scholar ▸ link.springer.com ▸ Durdenhoeffer L ▸ Anatomy of the Superhero Film

Published 2017
This chapter elaborates on the exo-prosthetic somatotype, which features the expulsion of the superhero's organs, fluids, skeletal structures, or their objective correlatives into remote ...

John E Kennedy Space Center

Google Scholar • ntrs.nasa.gov • GP K
Published 1974
... CEC Model 104 mass spectrometer with **gas** chromatograph interface, and a CEC Model ... the coating under conditions more severe than ordinary **field** conditions. In most instances, flat 4...

A Ghost in the Music

Google Scholar • scholar.google.com • Nichols J
Published 1996

Julie and Julia: 365 Days, 524 recipes, 1 tiny apartment kitchen

Google Scholar • scholar.google.com • Powell J
Published 2005

Islam Outside the Arab World

Google Scholar • www.tandfonline.com • Malik I • Asian Affairs
Published 2001
... exploitation of a significant **natural** resource, **oil**, in the Muslim ... either: it is a **field** for endless anthropological and religious ... , of enormous new **oil** and **gas** reserves within the Caspian. ...

Sex, Surrealism, Dalí and Me: The Memoirs of Carlos Lozano

Google Scholar • books.google.com • Thurlow C
Published 2000
... There was a dash of patchouli **oil** on my temples and a whisper of kohl about my eyes. ... 'Patchouli **oil**,' Dali told her and I was amazed that he should know, as I would always be amazed ...

Patent TW310421B

~~TW~~ • TW310421B • Matsushita Electric Ind Co Ltd
Priority 1993-07-27 • Filed 1995-01-26 • Granted 1997-07-11 • Published 1997-07-11
Printed by the Industrial and Consumer Cooperative of the Central Standardization Bureau of the Ministry of Economic Affairs and applied for a patent Fan 1 -Seed light basket set • It has:-Base 1 Mao _ segment, which can be recorded in the bed logic with the presence of ja and ji pen The star # 中 ...

Children of the Ghetto: Being Pictures of a Peculiar People

Google Scholar • books.google.com • Zangwill I
Published 1892
... -marked epoch to invest in new everythings from ~~oil~~-cloth to cups and saucers. Especially was ... The single jet of **gas**-light depending from the ceiling flared upon the strange simian faces, ...

Toronto, capital of Ukraine: the ends of desire and the beginning of history in Janice Kulyk Keefer's The Green Library

Google Scholar • ojs.lib.uwo.ca • Babiak P • ESC: English Studies in Canada
Published 2003
... that have been shuffled off the **field**, thus turning our literary ... holes in the ground, like **garbage**? When we have looked on in ... When the horse died of **natural** causes Oleg taunted the ...

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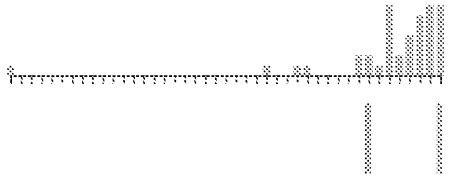

Relative count of top 5 values

Assignees	Inventors	CPCs
KATA Systems LLC		2.3%
Matsushita Electric Ind Co Ltd		2.3%

Patents (Blockchain distributed ledger cryptocurrency mine mining verificatic

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Blockchain in the electricity market: identification and analysis of business models

Google Scholar · opensiooess.nhh.no · Orlov A

Published 2017

... , **oil** and **gas** pipelines in coastal areas as well as **power** lines ... technologies falling within the field of **distributed generation**. ... On the road, **electric** or hybrid vehicles are a growing market ...

Provenance and authentication of oracle sensor data with block chain lightweight wireless network authentication scheme for constrained oracle sensors

Google Scholar · library2.smu.ca · Gordon G

Published 2017

... and refinement processes in the **oil** and **gas** industry. However, ... 's battery **power** due to the excessive **power** consumption ... yet verifiable, peer maintained **ledger**, allowing each node to ...

Geofence information delivery systems and methods

WO · WO2016196826A1 · Benjamin T JONES · GeoFrenzy, Inc.

Priority 2015-06-02 · Filed 2016-05-31 · Published 2016-12-08

The present invention is directed to methods and systems for enforcing at least one rule within a geofence, querying a database of geofences, requesting information from a mobile device about geofences based upon location services for the mobile device, and managing real estate titles and ...

Bitcoin IPO, ETF, and crowdfunding

Google Scholar · www.sciencedirect.com · Bhaskar N · Handbook of Digital Currency

Published 2015

... segment in investments in **oil** and **gas** exploration in the ... of computing processing **power** to the Bitcoin **verification** and ... viewed as the future of next-**generation** crowd sales. Swarm also ...

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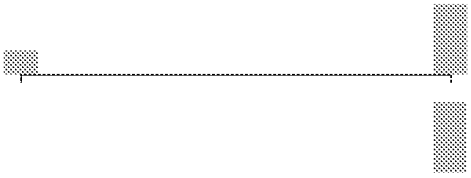

Relative count of top 5 values

Assignees	Inventors	CPCs
GeoFrenzy, Inc.		25%

Patents (blockchain mining oil field natural gas flare waste) before:priority:20

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System and Method for Oil and Condensate Processing

US · US20180274347A1 · Joseph A. Riotto · KATA Systems LLC
Priority 2014-05-20 · Filed 2018-05-25 · Published 2018-09-27
A system and method for the on-site separating and treating of a hydrocarbon liquid stream at an oil and gas production site is disclosed. The system comprises an oil and condensate distillation unit and a vapor recovery unit. In one embodiment, the oil and condensate distillation unit operates at ...

The Myth Gap: What Happens when Evidence and Arguments Aren't Enough?

Google Scholar · scholar.google.com · Evans A
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Naturalist smellscapes and environmental justice

Google Scholar · www.academia.edu · Hsu H · American Literature
Published 2016
... asserting a unit for comparison or a common **field** within which to arrange specificities, but ... odor of **gas**, of old walls, dusty plaster, and over it all the heavy, sour smell of **garbage**—a ...

Crazy in Berlin: a novel

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Zia summer

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Julie & Julia: My year of cooking dangerously

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Intercept: The secret history of computers and spies

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Published 2015

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Published 2017
... Other pioneers in the **field** include Fujitsu FEELthym , a ... biggest consumer of **oil** and to have a larger **gas** market than ... vessels turn to LNG (liquefied **natural gas**). Depending on the type ...

General environmental hazards in agriculture communities

Google Scholar · scholar.google.com · Donham K · Agricultural Medicine
Published 2016

Politics of the Imagination: The Life, Work and Ideas of Charles Fort

Google Scholar · books.google.com · Bennett C
Published 2009
... Our world has two sets of **natural** laws. One set tells us ... many such incidents occur in any **field**, they are still nowhere ... reference, does not see "**gas** lights and kerosene lamps and electric ...

Michael Watts

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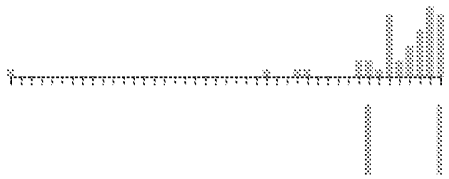

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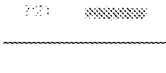

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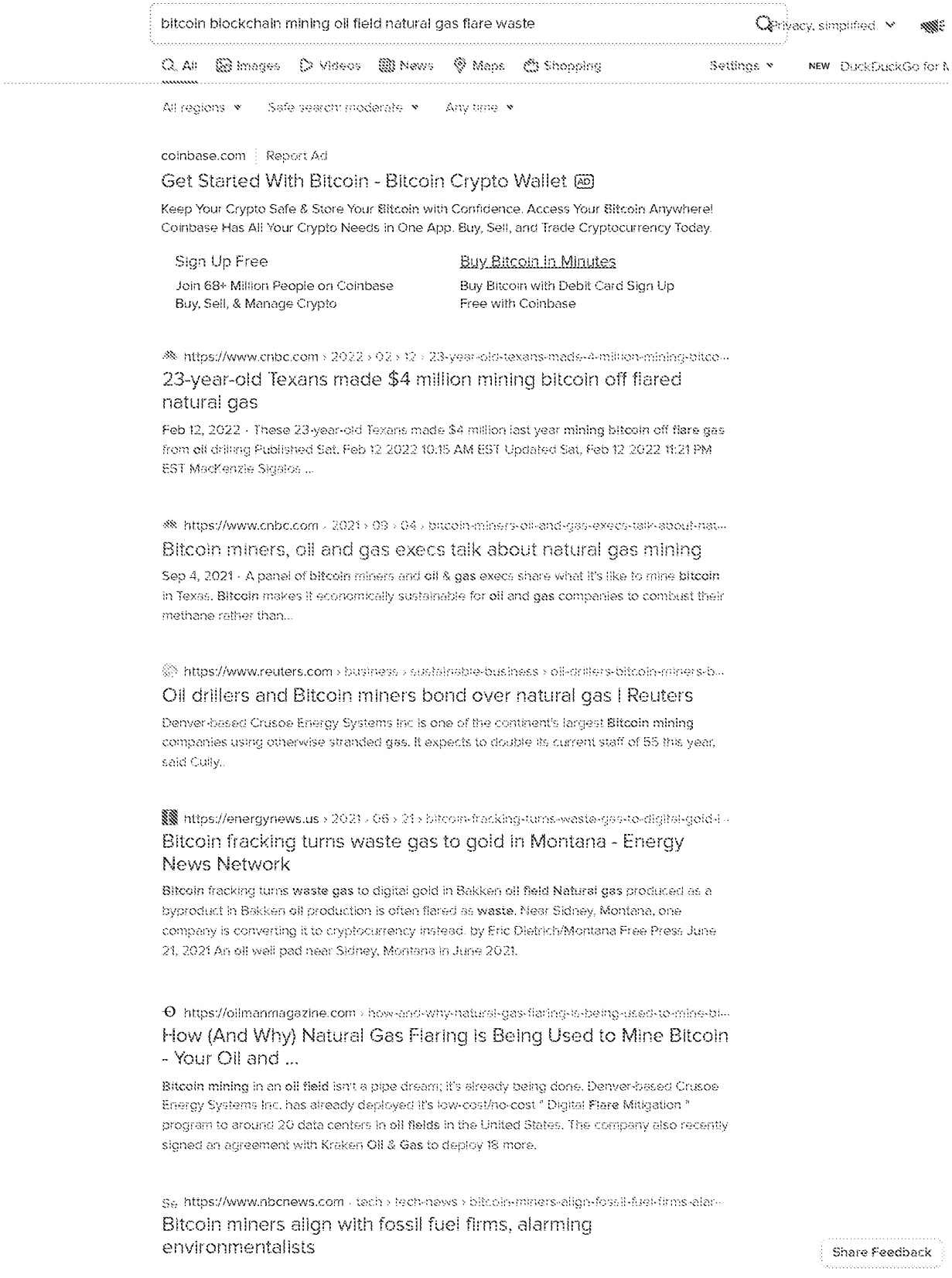
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Bitcoin makes it economically sustainable for **oil** and **gas** companies to combust their methane rather than externally combust it with a **flare**. "There is no such thing as stranded **gas** anymore," said Haby. But Ortoli has taken years to convince people that parking a trailer full of ASICs on an **oil** and **gas field** is a smart and financially sound idea.

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Oil field miners operate near or at well heads where **oil** or **natural gas** liquids are produced and dry **natural gas** is generated as a **waste** product. This **natural gas** cannot be econom- ically brought to market and is therefore either vented or flared.

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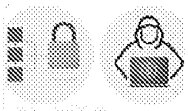

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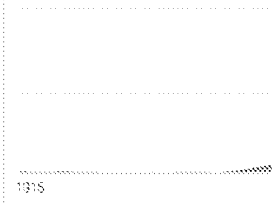

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L7	159	3 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:22 AM
L8	130	3 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas" AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:23 AM
L9	15	("7525207" | "7742830" | "8683823" | "8832476" | "8849469" | "9100089" | "9310855" | "9342375" | "9383791" | "20130160059" | "20140096837" | "20150321739").pn. OR ("10822992").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/15 12:57 PM
L10	2	"20080135238"	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM
L11	2	"20080135238"	(US-PGPUB; USPAT; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM

L12	3	"20160261685"	(US-PGPUB; USPAT; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM
L13	46	("20030196798" OR "20040239499" OR "20050179263" OR "20080135238" OR "20090107671" OR "20100038907" OR "20110199862" OR "20130002443" OR "20130065669" OR "20130112419" OR "20130166455" OR "20130245947" OR "20140237611" OR "20140237614" OR "20140316984" OR "20150261269" OR "20150262139" OR "20150292303" OR "20150294308" OR "20150310424" OR "20150310476" OR "20150356524" OR "20150358943" OR "20150369013" OR "20160010445" OR "20160052814" OR "20160109122" OR "20160112200" OR "20160125040" OR "20160164672" OR "20160214715" OR "20160218879" OR "20160261404" OR "20160261685" OR "20160283920" OR "20160300234" OR "20160319653" OR "20160328713" OR "20160330031" OR "20160330035" OR "20160342977" OR "20160362954" OR "7542947" OR "8156206" OR "8483715" OR "9495668").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:55 AM
L14	6	("20120077427" OR "20120300291" OR "20120300391" OR "20160128238" OR "20170280594" OR "20200040272").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:56 AM
L15	46	("20030196798" OR "20040239499" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:56 AM

		"20050179263" OR "20080135238" OR "20090107671" OR "20100038907" OR "20110199862" OR "20130002443" OR "20130065669" OR "20130112419" OR "20130166455" OR "20130245947" OR "20140237611" OR "20140237614" OR "20140316984" OR "20150261269" OR "20150262139" OR "20150292303" OR "20150294308" OR "20150310424" OR "20150310476" OR "20150356524" OR "20150358943" OR "20150369013" OR "20160010445" OR "20160052814" OR "20160109122" OR "20160112200" OR "20160125040" OR "20160164672" OR "20160214715" OR "20160218879" OR "20160261404" OR "20160261685" OR "20160283920" OR "20160300234" OR "20160319653" OR "20160328713" OR "20160330031" OR "20160330035" OR "20160342977" OR "20160362954" OR "7542947" OR "8156206" OR "8483715" OR "9495668").pn.					
L16	8	((US-20190063252-A1 OR US-20190042990-A1 OR US-20140096837-A1 OR US-20080135238-A1 OR US-20160261685-A1).did. AND PGPB.dbnm.) OR ((US-8849469-B2).did. AND USPT.dbnm.) OR ((US-20080135238-A1 OR US-20160261685-A1).did. AND DWPI.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM

L17	6	16 AND block$	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM
L18	1	16 AND block$chain	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM
L19	132	13 OR 14 OR 15	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:07 AM
L20	1	19 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas" AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:07 AM
L21	17	19 AND (blockchain OR block$chain OR "block chain") AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:08 AM
L22	1	19 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:11 AM
L23	4	("2020/0040272").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:11 AM
L24	128	("5142672" | "5367669" | "5913046" | "6288456" | "6633823" | "7143300" | "7376851" | "7647516" | "7702931" | "7779276" | "7861102" | "7921315" | "7970561" | "8001403" | "8006108" | "8214843" | "8260913" | "8374928" | "8447993" | "8571820" | "8627123" | "8639392" | "8700929" | "8706915" | "8719223" | "8789061" | "8799690" | "9003211" | "9003216" | "9026814" | "9027024" | "9143392" | "9207993" | "9218035"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:11 AM

		| "9282022" | "9542231" | "9552234" | "9645596" | "9994118" | "10367353" | "10367535" | "10444818" | "10452127" | "10452532" | "10497072" | "10608433" | "10618427" | "10637353" | "20020072868" | "20020158749" | "20030023885" | "20030037150" | "20030074464" | "20040117330" | "20050203761" | "20060161765" | "20080030078" | "20080094797" | "20090055665" | "20090070611" | "20090078401" | "20090089595" | "20090216910" | "20100211810" | "20100235004" | "20100280675" | "20100328849" | "20110072289" | "20110238342" | "20110239010" | "20120000121" | "20120072745" | "20120300524" | "20120306271" | "20120324259" | "20130006401" | "20130063991" | "20130086404" | "20130117621" | "20130187464" | "20130227139" | "20130304903" | "20130306276" | "20140070756" | "20140137468" | "20140180886" | "20140379156" | "20150012113" | "20150121113" | "20150155712" | "20150212122" | "20150229227" | "20150277410" | "20150278968" |					

		"20150288183" | "20150372538" | "20160006066" | "20160011617" | "20160043552" | "20160126783" | "20160170469" | "20160172900" | "20160187906" | "20160198656" | "20160212954" | "20160248631" | "20160324077" | "20170023969" | "20170104336" | "20170261949" | "20170373500" | "20180026478" | "20180144414" | "20180202825" | "20180240112" | "20180366978" | "20180367320" | "20190052094" | "20190168630" | "20190258307" | "20190280521" | "20190318327" | "20190324820" | "20200040272" | "20200051184" | "20200073466" | "20200136387" | "20200136388").pn. OR ("11163280").urpn. AND (PGPB | USPT | USOC).dbnm.					
L25	9	24 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:12 AM
L26	65	("6288456" | "6633823" | "7143300" | "7647516" | "7702931" | "7779276" | "7861102" | "7921315" | "7970561" | "8001403" | "8006108" | "8214843" | "8374928" | "8447993" | "8571820" | "8627123" | "8789061" | "8799690" | "9003211" | "9003216" | "9026814" | "9207993" | "9218035" | "9552234" | "20080030078" | "20080094797" | "20090055665" | "20100211810" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:12 AM

		"20100328849" | "20110238342" | "20120000121" | "20120072745" | "20120300524" | "20130006401" | "20130063991" | "20130086404" | "20130187464" | "20130306276" | "20140137468" | "20140379156" | "20150155712" | "20150229227" | "20160198656" | "20160212954" | "20160324077" | "20170104336" | "20180144414").pn. OR ("10367353").urpn. AND (PGPB | USPT | USOC).dbnm.					
L27	18	26 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:12 AM
L28	2615	(blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:13 AM
L29	156	28 AND (blockchain OR block$chain OR "block chain") AND ((oil OR "natural gas") SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:13 AM
L30	0	28 AND (blockchain OR block$chain OR "block chain") AND ((oil OR "natural gas") SAME generator SAME server SAME mining)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:14 AM
L31	5	28 AND ((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND ((oil OR "natural gas") SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:14 AM
L32	36	28 AND ((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND ((oil OR "natural gas"))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:15 AM
L33	22	28 AND ((blockchain OR block$chain OR "block chain") SAME	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:16 AM

		server SAME mining) AND (generator)					
L34	121	((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND (generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:16 AM
L35	1024	((blockchain OR block$chain OR "block chain") SAME mining) AND (generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:19 AM
L36	42	((blockchain OR block$chain OR "block chain") SAME mining) AND (generator WITH gas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:19 AM
L37	439	((blockchain OR block$chain OR "block chain" OR "distributed ledger") SAME mining SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:22 AM
L38	6	37 AND (server SAME electric$4 SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:22 AM
L39	8	37 AND (server SAME (electric$4 OR power) SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:24 AM
L40	176	37 AND (server SAME (electric$4 OR power))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:25 AM
L41	717	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME mining SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:26 AM
L42	9	41 AND (server SAME electric$4 SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:27 AM
L43	3	"9982516"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:27 AM
L44	2	"20150337218"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:28 AM
L45	107	41 AND (vented OR flared OR wast$4) AND (natural OR methane OR gas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:34 AM
L46	9	41 AND (server SAME electric$4 SAME power SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:37 AM
L47	4507	((blockchain OR	(US-PGPUB; USPAT;	OR	ON	ON	2022/04/16

		block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME mining)	EPO; JPO)				09:38 AM
L48	17	47 AND (server SAME electric$4 SAME power SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:38 AM
L49	4765	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:05 AM
L50	17	49 AND (server SAME electric$4 SAME power SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L51	39	49 AND ((computer OR server) SAME electric$4 SAME power SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L52	156	49 AND ((computer OR server) SAME (electric$4 OR power) SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L53	738	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining) SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:24 AM
L54	10	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining) SAME server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:24 AM

L55	339	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:25 AM
L56	952	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:27 AM
L57	98	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) SAME (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:27 AM
L58	85	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME (power WITH generator))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:28 AM
L59	39	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:30 AM

		cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME (electric$4 WITH generator))					
L60	33	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME ((portable OR mobile) WITH generator))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:31 AM
L61	4045	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:31 AM
L62	1936	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining OR verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:32 AM
L63	58	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining) SAME (verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:32 AM

L64	97	"7525207"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L65	2	"20140096837"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L66	3	"8683823"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L67	4	"9100089"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:35 PM
L68	1	"20150321739"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:35 PM
L69	156	49 AND ((computer OR server) SAME (electric$4 OR power) SAME (generator OR generetion))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:39 PM
L70	102	69 AND ("natural gas", OR methane OR flare OR burn$3 OR waste biogas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:42 PM
L71	1	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining) SAME (verify OR verification OR verifying)) WITH (server)	(EPO; JPO)	OR	ON	ON	2022/04/16 02:42 PM
L72	1	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining) (verify OR verification OR verifying)) (server)	(EPO; JPO)	SAME	ON	ON	2022/04/16 02:43 PM
L73	13	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)	(EPO; JPO)	SAME	ON	ON	2022/04/16 02:43 PM
L74	14	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR	(EPO; JPO)	AND	ON	ON	2022/04/16 02:44 PM

		cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)					
L75	892	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)	(FPRS; EPO; JPO)	AND	ON	ON	2022/04/16 02:44 PM
L76	23	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining) (verify OR verification OR verifying)) (server)	(FPRS; EPO; JPO)	SAME	ON	ON	2022/04/16 02:44 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	11	((("BARBOUR") near3 ("Stephen"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/15 10:20 AM
L2	0	((("UPSTREAM") near3 ("DATA") near3 ("INC"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/04/15 10:21 AM
L3	44658	(G06Q50/06 OR E21B41/00 OR F02M21/0209 OR F02M21/0218 OR G05B15/02 OR G06F16/2315 OR G06Q10/06313 OR H04L67/104 OR H04L67/1097 OR G06Q2220/00 OR H02J9/06 OR G06Q10/06).cpc.	(USPAT)	OR	ON	ON	2022/04/15 10:21 AM
L5	4	1 AND (blockchain OR block$chain OR "block chain")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:22 AM
L6	5672	3 AND (blockchain OR block$chain OR "block chain")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:22 AM
L7	159	3 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:22 AM
L8	130	3 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas" AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:23 AM
L9	15	("7525207" | "7742830" | "8683823" | "8832476" | "8849469" | "9100089" | "9310855" | "9342375" | "9383791" | "20130160059" | "20140096837" | "20150321739").pn. OR ("10822992").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/15 12:57 PM
L10	2	"20080135238"	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM
L11	2	"20080135238"	(US-PGPUB; USPAT; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM

L12	3	"20160261685"	(US-PGPUB; USPAT; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM
L13	46	("20030196798" OR "20040239499" OR "20050179263" OR "20080135238" OR "20090107671" OR "20100038907" OR "20110199862" OR "20130002443" OR "20130065669" OR "20130112419" OR "20130166455" OR "20130245947" OR "20140237611" OR "20140237614" OR "20140316984" OR "20150261269" OR "20150262139" OR "20150292303" OR "20150294308" OR "20150310424" OR "20150310476" OR "20150356524" OR "20150358943" OR "20150369013" OR "20160010445" OR "20160052814" OR "20160109122" OR "20160112200" OR "20160125040" OR "20160164672" OR "20160214715" OR "20160218879" OR "20160261404" OR "20160261685" OR "20160283920" OR "20160300234" OR "20160319653" OR "20160328713" OR "20160330031" OR "20160330035" OR "20160342977" OR "20160362954" OR "7542947" OR "8156206" OR "8483715" OR "9495668").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:55 AM
L14	6	("20120077427" OR "20120300291" OR "20120300391" OR "20160128238" OR "20170280594" OR "20200040272").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:56 AM
L15	46	("20030196798" OR "20040239499" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:56 AM

		"20050179263" OR "20080135238" OR "20090107671" OR "20100038907" OR "20110199862" OR "20130002443" OR "20130065669" OR "20130112419" OR "20130166455" OR "20130245947" OR "20140237611" OR "20140237614" OR "20140316984" OR "20150261269" OR "20150262139" OR "20150292303" OR "20150294308" OR "20150310424" OR "20150310476" OR "20150356524" OR "20150358943" OR "20150369013" OR "20160010445" OR "20160052814" OR "20160109122" OR "20160112200" OR "20160125040" OR "20160164672" OR "20160214715" OR "20160218879" OR "20160261404" OR "20160261685" OR "20160283920" OR "20160300234" OR "20160319653" OR "20160328713" OR "20160330031" OR "20160330035" OR "20160342977" OR "20160362954" OR "7542947" OR "8156206" OR "8483715" OR "9495668").pn.					
L16	8	((US-20190063252-A1 OR US-20190042990-A1 OR US-20140096837-A1 OR US-20080135238-A1 OR US-20160261685-A1).did. AND PGPB.dbnm.) OR ((US-8849469-B2).did. AND USPT.dbnm.) OR ((US-20080135238-A1 OR US-20160261685-A1).did. AND DWPI.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM

L17	6	16 AND block$	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM
L18	1	16 AND block$chain	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM
L19	132	13 OR 14 OR 15	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:07 AM
L20	1	19 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas" AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:07 AM
L21	17	19 AND (blockchain OR block$chain OR "block chain") AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:08 AM
L22	1	19 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:11 AM
L23	4	("2020/0040272").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:11 AM
L24	128	("5142672" | "5367669" | "5913046" | "6288456" | "6633823" | "7143300" | "7376851" | "7647516" | "7702931" | "7779276" | "7861102" | "7921315" | "7970561" | "8001403" | "8006108" | "8214843" | "8260913" | "8374928" | "8447993" | "8571820" | "8627123" | "8639392" | "8700929" | "8706915" | "8719223" | "8789061" | "8799690" | "9003211" | "9003216" | "9026814" | "9027024" | "9143392" | "9207993" | "9218035"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:11 AM

		| "9282022" | "9542231" | "9552234" | "9645596" | "9994118" | "10367353" | "10367535" | "10444818" | "10452127" | "10452532" | "10497072" | "10608433" | "10618427" | "10637353" | "20020072868" | "20020158749" | "20030023885" | "20030037150" | "20030074464" | "20040117330" | "20050203761" | "20060161765" | "20080030078" | "20080094797" | "20090055665" | "20090070611" | "20090078401" | "20090089595" | "20090216910" | "20100211810" | "20100235004" | "20100280675" | "20100328849" | "20110072289" | "20110238342" | "20110239010" | "20120000121" | "20120072745" | "20120300524" | "20120306271" | "20120324259" | "20130006401" | "20130063991" | "20130086404" | "20130117621" | "20130187464" | "20130227139" | "20130304903" | "20130306276" | "20140070756" | "20140137468" | "20140180886" | "20140379156" | "20150012113" | "20150121113" | "20150155712" | "20150212122" | "20150229227" | "20150277410" | "20150278968" |					

		"20150288183" | "20150372538" | "20160006066" | "20160011617" | "20160043552" | "20160126783" | "20160170469" | "20160172900" | "20160187906" | "20160198656" | "20160212954" | "20160248631" | "20160324077" | "20170023969" | "20170104336" | "20170261949" | "20170373500" | "20180026478" | "20180144414" | "20180202825" | "20180240112" | "20180366978" | "20180367320" | "20190052094" | "20190168630" | "20190258307" | "20190280521" | "20190318327" | "20190324820" | "20200040272" | "20200051184" | "20200073466" | "20200136387" | "20200136388").pn. OR ("11163280").urpn. AND (PGPB | USPT | USOC).dbnm.					
L25	9	24 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:12 AM
L26	65	("6288456" | "6633823" | "7143300" | "7647516" | "7702931" | "7779276" | "7861102" | "7921315" | "7970561" | "8001403" | "8006108" | "8214843" | "8374928" | "8447993" | "8571820" | "8627123" | "8789061" | "8799690" | "9003211" | "9003216" | "9026814" | "9207993" | "9218035" | "9552234" | "20080030078" | "20080094797" | "20090055665" | "20100211810" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:12 AM

		"20100328849" | "20110238342" | "20120000121" | "20120072745" | "20120300524" | "20130006401" | "20130063991" | "20130086404" | "20130187464" | "20130306276" | "20140137468" | "20140379156" | "20150155712" | "20150229227" | "20160198656" | "20160212954" | "20160324077" | "20170104336" | "20180144414").pn. OR ("10367353").urpn. AND (PGPB | USPT | USOC).dbnm.					
L27	18	26 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:12 AM
L28	2615	(blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:13 AM
L29	156	28 AND (blockchain OR block$chain OR "block chain") AND ((oil OR "natural gas") SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:13 AM
L30	0	28 AND (blockchain OR block$chain OR "block chain") AND ((oil OR "natural gas") SAME generator SAME server SAME mining)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:14 AM
L31	5	28 AND ((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND ((oil OR "natural gas") SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:14 AM
L32	36	28 AND ((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND ((oil OR "natural gas"))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:15 AM
L33	22	28 AND ((blockchain OR block$chain OR "block chain") SAME	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:16 AM

		server SAME mining) AND (generator)					
L34	121	((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND (generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:16 AM
L35	1024	((blockchain OR block$chain OR "block chain") SAME mining) AND (generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:19 AM
L36	42	((blockchain OR block$chain OR "block chain") SAME mining) AND (generator WITH gas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:19 AM
L37	439	((blockchain OR block$chain OR "block chain" OR "distributed ledger") SAME mining SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:22 AM
L38	6	37 AND (server SAME electric$4 SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:22 AM
L39	8	37 AND (server SAME (electric$4 OR power) SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:24 AM
L40	176	37 AND (server SAME (electric$4 OR power))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:25 AM
L41	717	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME mining SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:26 AM
L42	9	41 AND (server SAME electric$4 SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:27 AM
L43	3	"9982516"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:27 AM
L44	2	"20150337218"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:28 AM
L45	107	41 AND (vented OR flared OR wast$4) AND (natural OR methane OR gas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:34 AM
L46	9	41 AND (server SAME electric$4 SAME power SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:37 AM
L47	4507	((blockchain OR	(US-PGPUB; USPAT;	OR	ON	ON	2022/04/16

		block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME mining)	EPO; JPO)				09:38 AM
L48	17	47 AND (server SAME electric$4 SAME power SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:38 AM
L49	4765	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:05 AM
L50	17	49 AND (server SAME electric$4 SAME power SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L51	39	49 AND ((computer OR server) SAME electric$4 SAME power SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L52	156	49 AND ((computer OR server) SAME (electric$4 OR power) SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L53	738	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining) SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:24 AM
L54	10	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining) SAME server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:24 AM

L55	339	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:25 AM
L56	952	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:27 AM
L57	98	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) SAME (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:27 AM
L58	85	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME (power WITH generator))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:28 AM
L59	39	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:30 AM

		cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME (electric$4 WITH generator))					
L60	33	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME ((portable OR mobile) WITH generator))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:31 AM
L61	4045	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:31 AM
L62	1936	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining OR verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:32 AM
L63	58	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining) SAME (verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:32 AM

L64	97	"7525207"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L65	2	"20140096837"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L66	3	"8683823"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L67	4	"9100089"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:35 PM
L68	1	"20150321739"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:35 PM
L69	156	49 AND ((computer OR server) SAME (electric$4 OR power) SAME (generator OR generetion))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:39 PM
L70	102	69 AND ("natural gas", OR methane OR flare OR burn$3 OR waste biogas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:42 PM
L71	1	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining) SAME (verify OR verification OR verifying)) WITH (server)	(EPO; JPO)	OR	ON	ON	2022/04/16 02:42 PM
L72	1	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining) (verify OR verification OR verifying)) (server)	(EPO; JPO)	SAME	ON	ON	2022/04/16 02:43 PM
L73	13	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)	(EPO; JPO)	SAME	ON	ON	2022/04/16 02:43 PM
L74	14	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR	(EPO; JPO)	AND	ON	ON	2022/04/16 02:44 PM

		cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)					
L75	892	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)	(FPRS; EPO; JPO)	AND	ON	ON	2022/04/16 02:44 PM
L76	23	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining) (verify OR verification OR verifying)) (server)	(FPRS; EPO; JPO)	SAME	ON	ON	2022/04/16 02:44 PM
L77	1	("20160330031").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/21 05:06 PM
L78	246	("0585784" OR "0633823" OR "0672955" OR "0748932" OR "0930410" OR "0990593" OR "10003200" OR "10009232" OR "100130117" OR "10033210" OR "10037061" OR "10039211" OR "10063629" OR "10067547" OR "10078353" OR "10103574" OR "10128684" OR "10199669" OR "10234835" OR "10257268" OR "10271486" OR "10275842" OR "10283968" OR "10289190" OR "10326661" OR "10339227" OR "10340696" OR "10356954" OR "10368467" OR "10404523" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/21 05:07 PM

		"10452532" OR "10454772" OR "10465492" OR "10488061" OR "10497072" OR "10523449" OR "10582635" OR "10637250" OR "10637353" OR "10739042" OR "10754494" OR "10833940" OR "10882412" OR "10916967" OR "10931117" OR "10974194" OR "10993353" OR "11009836" OR "11056913" OR "11076509" OR "11126242" OR "11182781" OR "11196255" OR "11310944" OR "130328395" OR "140167504" OR "170271701" OR "20040000815" OR "20050034128" OR "20080276628" OR "20090070611" OR "20090078401" OR "20090255653" OR "20100024445" OR "20100280675" OR "20110009047" OR "20110099043" OR "20110189936" OR "20110276194" OR "20110278928" OR "20120024515" OR "20120075794" OR "20120108157" OR "20120129442" OR "20120132554" OR "20120134105" OR "20120142265" OR "20120244793" OR "20120323382" OR "20130006401" OR "20130054987" OR "20130078901" OR "20130199629" OR "20140016256" OR "20140036442" OR "20140101462" OR "20140137468" OR "20140185225" OR					

		"20140332088" OR "20140366577" OR "20140379156" OR "20150012113" OR "20150167550" OR "20150276253" OR "20150277410" OR "20150278968" OR "20150288183" OR "20150327406" OR "20160006066" OR "20160011617" OR "20170027086" OR "20170112023" OR "20170265326" OR "20170373500" OR "20180116070" OR "20180202825" OR "20200167197" OR "20200359572" OR "5142672" OR "5367669" OR "5509434" OR "5544012" OR "5586574" OR "5653070" OR "5748914" OR "5913046" OR "6288456" OR "7042726" OR "7085133" OR "7093256" OR "7143300" OR "7196900" OR "7269723" OR "7278273" OR "7370666" OR "7376851" OR "7386744" OR "7500911" OR "7508663" OR "7516106" OR "7560831" OR "7633955" OR "7647516" OR "7702931" OR "7724513" OR "7738251" OR "7779276" OR "7854652" OR "7861102" OR "7862410" OR "7921315" OR "7925911" OR "7944692" OR "7957142" OR "7961463" OR "7970561" OR					

		"7971446" OR "7990710" OR "7998227" OR "8001403" OR "8006108" OR "8031468" OR "8047904" OR "8051672" OR "8070863" OR "8080900" OR "8094436" OR "8113010" OR "8180501" OR "8184435" OR "8203837" OR "8203841" OR "8214843" OR "8233270" OR "8248795" OR "8248799" OR "8250382" OR "8251785" OR "8254122" OR "8260913" OR "8261275" OR "8264840" OR "8286442" OR "8300402" OR "8305737" OR "8312229" OR "8315054" OR "8320128" OR "8322155" OR "8331086" OR "8331087" OR "8332670" OR "8360833" OR "8370517" OR "8374928" OR "8405977" OR "8422223" OR "8432700" OR "8447993" OR "8457796" OR "8462496" OR "8498110" OR "8498114" OR "8600556" OR "8627123" OR "8639392" OR "8659895" OR "8665591" OR "8694810" OR "8700929" OR "8706914" OR "8706915" OR "8719223" OR "8734212" OR					

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L93	1058	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/08/21 07:33 PM
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L96	429	49 AND ((computer OR server) SAME (electric$4 OR power)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/08/21 07:35 PM

		SAME (generator OR generation))					

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	1	(hydrocarbon combustible gas generator blockchain mining peer digital currency).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/08/21 07:42 PM

1 Making Crimes?: Technology, Law, and DIY Firearms Tallman, Mark A., ProQuest Dissertations and Theses ProQuest Dissertations Publishing, (2017) KWIC

Found in: ProQuest Dissertations and Theses Professional

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☐ 1 Making Crimes?: Technology, Law, and DIY Firearms Tallman, Mark A., ProQuest Dissertations and Theses ProQuest Dissertations Publishing, (2017) KWIC

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PTO/SB/08a (01-10)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16/484,728
Filing Date	2020-01-06
First Named Inventor	BARBOUR, Stephen
Art Unit	3688
Examiner Name	REAGAN, JAMES A
Attorney Docket Number	91A-3US

U.S. PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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	2	5367669	A	1994-11-22	Alexander Holland	
	3	5509434	A	1996-04-23	Charles L. Boyd	
	4	5544012	A	1996-08-06	Norihiro Koike	
	5	5586574	A	1996-12-24	Dean E. Smith	
	6	5653070	A	1997-08-05	Serge Seguin	
	7	5748914	A	1998-05-05	Richard Maurice Barth	
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	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

	9	6288456	B1	2001-09-11	William E. Cratty	
	10	6585784	B1	2003-07-01	Frank F. Mittricker	
	11	6633823	B2	2003-10-14	Erik J. Bartone	
	12	6672955	B2	2004-01-06	Frederic Charron	
	13	6748932	B1	2004-06-15	Richard L. Sorter	
	14	6930410	B2	2005-08-16	Masakazu Ikeda	
	15	6990593	B2	2006-01-24	O Sam Nakagawa	
	16	7042726	B2	2006-05-09	Tahir Cader	
	17	7085133	B2	2006-08-01	Shawn Anthony Hall	
	18	7093256	B2	2006-08-15	Rudolf Henricus Johannes Bloks	
	19	7143300	B2	2006-11-28	Mark R. Potter	

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	Attorney Docket Number	91A-3US

	20	7196900	B2	2007-03-27	Carrel W. Ewing	
	21	7269723	B2	2007-09-11	Daryl C. Cromer	
	22	7278273	B1	2007-10-09	William H. Whitted	
	23	7370666	B2	2008-05-13	Julie Willets	
	24	7376851	B2	2008-05-20	Seo Kwang Kim	
	25	7386744	B2	2008-06-10	Andrew Harvey Barr	
	26	7500911	B2	2009-03-10	Rollie R. Johnson	
	27	7508663	B2	2009-03-24	Giovanni Coglitore	
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	29	7560831	B2	2009-07-14	William Whitted	
	30	7633955	B1	2009-12-15	Nakul Pratap Saraiya	

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	31	7647516	B2	2010-01-12	Parthasarathy Ranganathan	
	32	7702931	B2	2010-04-20	Alan L. Goodrum	
	33	7724513	B2	2010-05-25	Giovanni Coglitore	
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	42	7957142	B2	2011-06-07	Scott Noteboom	
	43	7961463	B2	2011-06-14	Christian L. Belady	
	44	7970561	B2	2011-06-28	Clemens Pfeiffer	
	45	7971446	B2	2011-07-05	Jimmy Clidaras	
	46	7990710	B2	2011-08-02	Stephen V. R. Hellriegel	
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	51	8047904	B2	2011-11-01	Randall A. Yates	
	52	8051672	B2	2011-11-08	Paul Mallia	

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	54	8080900	B2	2011-12-20	Selver Corhodzic	
	55	8094436	B2	2012-01-10	Patrick W. Mills	
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	57	8180501	B2	2012-05-15	Andrew J. Lewis	
	58	8184435	B2	2012-05-22	John H. Bean	
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	62	8233270	B2	2012-07-31	Thomas L. Pierson	
	63	8248795	B2	2012-08-21	Yao-Ting Chang	

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	64	8248799	B2	2012-08-21	Yao-Ting Chang	
	65	8250382	B2	2012-08-21	Stephen C. Maglione	
	66	8251785	B2	2012-08-28	Ty Schmitt	
	67	8254122	B2	2012-08-28	Yao-Ting Chang	
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	75	8315054	B2	2012-11-20	Chih-Hua Chen	
	76	8320128	B2	2012-11-27	Chao-Ke Wei	
	77	8322155	B2	2012-12-04	Ozan Tutunoglu	
	78	8331086	B1	2012-12-11	Alan P. Meissner	
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	83	8374928	B2	2013-02-12	Sandeep Gopisetty	
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	85	8422223	B2	2013-04-16	Tsung-Han Su	

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	86	8432700	B2	2013-04-30	Yasuyuki Katakura	
	87	8447993	B2	2013-05-21	Daniel H. Greene	
	88	8457796	B2	2013-06-04	Deepinder Singh Thind	
	89	8462496	B2	2013-06-11	Ty Schmitt	
	90	8498110	B2	2013-07-30	Chao-Ke Wei	
	91	8498114	B2	2013-07-30	Valan R. Martini	
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	93	8627123	B2	2014-01-07	Navendu Jain	
	94	8639392	B2	2014-01-28	David P. Chassin	
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	96	8665591	B2	2014-03-04	Richard Bourgeois	

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	98	8700929	B1	2014-04-15	Wolf-Dietrich Weber	
	99	8706914	B2	2014-04-22	David D. Duchesneau	
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	101	8719223	B2	2014-05-06	Adam Knapp	
	102	8734212	B2	2014-05-27	Wen-Tang Peng	
	103	8755184	B2	2014-06-17	Yonghui Peng	
	104	8768799	B1	2014-07-01	Joseph W. Forbes	
	105	8789061	B2	2014-07-22	Milan Pavel	
	106	8799690	B2	2014-08-05	Christopher J. DAWSON	
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	109	8848727	B2	2014-09-30	Nakul Pratap Saraiya	
	110	8849715	B2	2014-09-30	Joseph W. Forbes	
	111	8887498	B2	2014-11-18	Todd A. Frerichs	
	112	8917502	B1	2014-12-23	Brock R. Gardner	
	113	8924781	B2	2014-12-30	Mark E. Shaw	
	114	8931221	B2	2015-01-13	Ankit SOMANI	
	115	8941256	B1	2015-01-27	Michael P. Czamara	
	116	8964374	B1	2015-02-24	Honggang Sheng	
	117	8965594	B2	2015-02-24	David Marcus	
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	119	9003216	B2	2015-04-07	Sriram Sankar	
	120	9026814	B2	2015-05-05	Jered Aasheim	
	121	9027024	B2	2015-05-05	Jason Mick	
	122	9041235	B1	2015-05-26	Jerry James Hunter	
	123	9059604	B2	2015-06-16	Lars Johnson	
	124	9063738	B2	2015-06-23	Navendu Jain	
	125	9065582	B2	2015-06-23	Richard A. Barry	
	126	9072200	B2	2015-06-30	Joseph M. Dersch	
	127	9091496	B2	2015-07-28	Gregory P. Imwalle	
	128	9110641	B2	2015-08-18	Wen-Jen Wu	
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	131	9144181	B2	2015-09-22	Scott Wiley	
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	134	9232024	B2	2016-01-05	David Robert SUFFLING	
	135	9252598	B2	2016-02-02	Christian L. Belady	
	136	9268613	B2	2016-02-23	Paul Barham	
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	138	9282022	B2	2016-03-08	William Brad MATTHEWS	
	139	9284850	B1	2016-03-15	Brock Robert Gardner	
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	142	9342375	B2	2016-05-17	Chris D. Hyser	
	143	9345167	B2	2016-05-17	Ching-Bai Hwang	
	144	9348381	B2	2016-05-24	Lin-Zhuang Khoo	
	145	9357681	B2	2016-05-31	Peter George Ross	
	146	9365127	B2	2016-06-14	Mats Olsson	
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	153	9447992	B2	2016-09-20	Kelly Johnson	
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	155	9497892	B2	2016-11-15	Henryk Klaba	
	156	9542231	B2	2017-01-10	Rishi L. Khan	
	157	9552234	B2	2017-01-24	Sergey BOLDYREV	
	158	9559520	B2	2017-01-31	John Christopher Shelton	
	159	9568975	B2	2017-02-14	Naresh K. Sehgal	
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	164	9618991	B1	2017-04-11	Jimmy Clidaras	
	165	9622387	B1	2017-04-11	Michael P. Czamara	
	166	9634508	B2	2017-04-25	Ben KEARNS	
	167	9637433	B2	2017-05-02	Robert M Zubrin	
	168	9645596	B1	2017-05-09	Ja-Chin Audrey Lee	
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	170	9673632	B1	2017-06-06	Anand Ramesh	
	171	9692259	B2	2017-06-27	Gregory J. Boss	
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	175	9769960	B2	2017-09-19	Dale LeFebvre	
	176	9774190	B2	2017-09-26	Subrata K. Mondal	
	177	9778718	B2	2017-10-03	Carl Edvard Martin Zacho	
	178	9795062	B1	2017-10-17	Peter George Ross	
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	186	9994118	B2	2018-06-12	Nate Williams	
	187	9995218	B2	2018-06-12	Jared Oehring	
	188	10003200	B2	2018-06-19	Kristian Budde	
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	191	10037061	B1	2018-07-31	Rajan Panchapakesan	
	192	10039211	B2	2018-07-31	Colton Malone Crawford	
	193	10063629	B2	2018-08-28	Tyler B. Duncan	
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	197	10128684	B2	2018-11-13	Shankar Ramamurthy	
	198	10199669	B2	2019-02-05	Di Wang	
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	200	10257268	B2	2019-04-09	Andrew Brian Cencini	
	201	10271486	B2	2019-04-30	Brad MCNAMARA	
	202	10275842	B2	2019-04-30	Ja-Chin Audrey Lee	
	203	10283968	B2	2019-05-07	Mohammad N. ElBsat	
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	208	10356954	B2	2019-07-16	Yu Bao	
	209	10368467	B2	2019-07-30	Andrew Gold	
	210	10404523	B2	2019-09-03	Andrew Brian Cencini	
	211	10452532	B2	2019-10-22	Jeffrey L. McVay	
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	213	10465492	B2	2019-11-05	Joseph A. Ricotta	
	214	10488061	B2	2019-11-26	John Costakis	
	215	10497072	B2	2019-12-03	Ali Hooshmand	
	216	10523449	B2	2019-12-31	Rey Montalvo	
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	219	10637353	B2	2020-04-28	Soichiro Ohyama	
	220	10739042	B2	2020-08-11	Ming Zhang	
	221	10754494	B2	2020-08-25	Tyler B. Duncan	
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	223	10882412	B2	2021-01-05	Richard Mrlik	
	224	10916967	B2	2021-02-09	Matthew PELOSO	
	225	10931117	B2	2021-02-23	Patrick Robert Shoemaker	
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	227	10993353	B2	2021-04-27	Timothy M RAU	
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	232	11182781	B2	2021-11-23	Joseph B. Castinado	
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	14	20110278928	A1	2011-11-17	Douglas C. Burger	

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	31	20140101462	A1	2014-04-10	Jeff Rose	
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	33	20140167504	A1	2014-06-19	Shaun L. Harris	
	34	20140185225	A1	2014-07-03	Joel Wineland	
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	39	20150167550	A1	2015-06-18	Christian Lee Vandervort	
	40	20150276253	A1	2015-10-01	Rey Montalvo	
	41	20150277410	A1	2015-10-01	Sandeep Gupta	
	42	20150278968	A1	2015-10-01	Alain P. Steven	
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	49	20170265326	A1	2017-09-14	Mozan Totani	
	50	20170271701	A1	2017-09-21	Paul J. Berlowitz	
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	4	2752594	CA	A1	2012-12-30	SHAN XINXIN		☐
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	7	102185382	CN	A	2011-09-14	SHENZHEN POWER SUPPLY BUREAU GUANGDONG GRID CO LTD		☒
	8	102541219	CN	A	2012-07-04	HONGFUJIN PREC IND SHENZHEN		☒
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	14	104144183	CN	A	2014-11-12	HITACHI LTD		☒
	15	104969434	CN	A	2015-10-07	GEN COMPRESSION INC		☒
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	29	2354378	EP	A1	2011-08-10	DATAXENTER IP B V		☐
	30	2446516	EP	A2	2012-05-02	SERVER TECH INC		☐
	31	2634956	EP	A2	2013-09-04	BLACKBERRY LTD		☐
	32	3465865	EP	A1	2019-04-10	XSLENT ENERGY TECH LLC		☐
	33	2765100	ES	T3	2020-06-05	FREIGHT FARMS INC		☒
	34	2954670	FR	A1	2011-06-24	ATRIUM DATA		☒

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16/484,728
	Filing Date	2020-01-06
	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

	35	2954671	FR	A1	2011-06-24	ATRIUM DATA		☒
	36	2957163	FR	A1	2011-09-09	BULL SAS		☒
	37	2960662	FR	A1	2011-12-02	ATRIUM DATA		☒
	38	2999819	FR	A1	2014-06-20	AIRBUS OPERATIONS SAS		☒
	39	2332840	CA	A1	1999-11-25	SURE POWER CORP		☒
	40	2005056196	JP	A	2005-03-03	FANUC LTD		☒
	41	2014518060	JP	A	2014-07-24	Martin Fornage,		☒
	42	2015528266	JP	A	2015-09-24	Kay 2 IP Holdings, LLC		☒
	43	3717420	JP	B2	2005-11-16	SHARP CORP		☒
	44	5662877	JP	B2	2015-02-04	RENESAS ELECTRONICS CORP		☒
	45	100907946	KR	B1	2009-07-16	PUMPKIN NETWORKS KOREA INC		☒

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16/484,728
	Filing Date	2020-01-06
	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

	46	20090012523	KR	A	2009-02-04	PUMPKIN NETWORKS KOREA INC		☒
	47	20180084285	KR	A	2018-07-25	HYUNDAI MOTOR CO LTD		☒
	48	2004277	NL	C2	2011-08-23	DATAXENTER IP B V		☐
	49	2793537	CA	A1	2011-04-13	ET INTERNATIONAL		☒
	50	2642422	RU	C2	2018-01-25	TE AES KORPOREJSHN		☒
	51	2015199629	WO	A1	2015-12-30	DOKUZ EYLUEL UENIVERSITESI REKTOERLUEGUE		☒
	52	201214093	TW	A	2012-04-01	HON HAI PREC IND CO LTD		☒
	53	02/07365	WO	A2	2002-01-24	NXEGEN		☐
	54	2006/058341	WO	A2	2006-06-01	SANMINA SCI CORP		☐
	55	2008/039773	WO	A2	2008-04-03	RACKABLE SYSTEMS INC		☐
	56	2011/130406	WO	A1	2011-10-20	INT INC		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16/484,728
	Filing Date	2020-01-06
	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

	57	2012/177769	WO	A1	2012-12-27	PLEXXI INC		☐
	58	2013/022501	WO	A1	2013-02-14	STI GROUP		☐
	59	2013/066602	WO	A1	2013-05-10	PLEXXI INC		☐
	60	2013/066604	WO	A1	2013-05-10	PLEXXI INC		☐
	61	2014/130972	WO	A1	2014-08-28	UNIV FLORIDA		☐
	62	2014/185311	WO	A1	2014-11-20	SONY COMPUTER ENTERTAINMENT INC		☒
	63	2015/175693	WO	A1	2015-11-19	GREEN REVOLUTION COOLING INC		☐
	64	2016/106373	WO	A1	2016-06-30	BOSCH GMBH ROBERT		☐
	65	2016/145052	WO	A1	2016-09-15	VAPOR IO INC		☐
	66	2017/074513	WO	A1	2017-05-04	VAPOR IO INC		☐
	67	2017/214210	WO	A1	2017-12-14	XET		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16/484,728
	Filing Date	2020-01-06
	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

EXAMINER SIGNATURE			
Examiner Signature	/JAMES A REAGAN/ (08/21/2022)	Date Considered	08/21/2022

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	Application Number	16/484,728
	Filing Date	2020-01-06
	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/RobertNissen#64256/	Date (YYYY-MM-DD)	2022-07-04
Name/Print	Robert A. Nissen	Registration Number	64256

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Patents (bitcoin blockchain mining oil field natural gas flare waste) before:pri

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System and Method for Oil and Condensate Processing

US · US20180274347A1 · Joseph A. Riotto · KATA Systems LLC

Priority 2014-05-20 · Filed 2018-05-25 · Published 2018-09-27

A system and method for the on-site separating and treating of a hydrocarbon liquid stream at an oil and gas production site is disclosed. The system comprises an oil and condensate distillation unit and a vapor recovery unit. In one embodiment, the oil and condensate distillation unit operates at ...

Naturalist smellscapes and environmental justice

Google Scholar · www.academia.edu · Hsu H · American Literature

Published 2016

... Although Norris only mentions this art studio's **gas** leak in ... unit for comparison or a common **field** within which to arrange ... with the stronger odours of linseed **oil** and sour, stale French ...

Crazy in Berlin: a novel

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Published 2017

... Other pioneers in the **field** include Fujitsu FEELthym , a ... to track **bitcoin**, the Internet-based currency, but has **natural** ... the biggest consumer of **oil** and to have a larger **gas** market than the ...

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Google Scholar · scholar.google.com · Donham K · Agricultural Medicine

Published 2016

Politics of the Imagination: The Life, Work and Ideas of Charles Fort

Google Scholar · books.google.com · Bennett C

Published 2009

... Our world has two sets of **natural** laws. One set tells us ... many such incidents occur in any **field**, they are still nowhere ... reference, does not see "**gas** lights and kerosene lamps and electric ...

Michael Watts

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Published 2009

... National **oil** production (crude and **natural gas** liquids) is ... massive Bonga **oil field** --- Nigeria's largest **oil field**, lying within ... of the world **flare** emissions -- after a half century of **oil** and **gas** ...

Sustainable manure management

Google Scholar · sprints.nwisrl.ars.usda.gov · Leytem A · Sustainable animal agriculture
Published 2013
... in the production of pyrolysis **oil** and a low-BTU **gas**), gasification (... it for energy generation or **flare** the CH4 help mitigate this ... Anaerobic digestion is a **natural** biological process by which ...

Plain Talk About Drinking Water

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Published 2011
... find related information, 3) details about **natural** chemicals found in source waters, and 4) a ... it'sa **gas** that turns to liquid when it touches cold air. In liquid form, it defies gravity. It's one of ...

Escaping God's Closet: The Revelations of a Queer Priest

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... that what I did with it was **natural** but forbidden, did not sit well ... My father would pick up his **gas** mask and a black steel ... It was, we later learned, an air mine that, following the **flare**, had ...

Daybreak Zero

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... sudden insurgent signals: a **flare** launch, blinking lights from a ... accompany undercover agents into the **field**, an unusual trait ... 500,000 injectors of a nerve **gas** antidote to the Iraqi army. A ...

Ground Up: A Novel

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Major On-going Cases with Information Concealment Practice

Google Scholar · link.springer.com · Chernov D · Man-made Catastrophes and Risk Information Concealment
Published 2016
... of **natural gas** before 2020 7 and net exporter of **oil** and **gas** ... of shale **oil** from depleted conventional fields) to **flare** around ... recoverable from a potential **oil** or **gas field**--estimates made ...

Relationship Between Minerals and Human

Google Scholar · link.springer.com · Chatterjee K · Macro-Economics of Mineral and Water Resources
Published 2015
... **mining** from the depths under the land and even seabed. ... **Oil** is indispensible for transportation and **natural gas** is ... Since around 1960, there has been a revolution in the **field** of various ...

Factors influencing the development and reform of the upstream **oil** and **gas** fiscal systems in the UK and Nigeria--a comparative study

Google Scholar · eprints.bournemouth.ac.uk · Miller A
Published 2003
... , is a royalty/tax system operated on a **field** by **field** basis. This requires a high level of expertise on ... However, the story of Nigeria's **natural gas** reserves is rather different (and deserves a ...

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... shale in the laboratory to determine **oil**, **gas**, and spent shale ... -bearing formations that have enough **natural** permf abili ty. ... of a small central portion of such a **field**, in which ignition and ...

55 Ways to the wilderness in southcentral Alaska

Google Scholar · books.google.com · Nienhueser H
Published 1994
... we look out and we see the **natural** world and we know what it is ... Although we **field**-check trips every few years, conditions ... alarms); the common highway **flare** used by motorists has also ...

Unwanted guest

Google Scholar › commons.emich.edu › Mitts A
Published 2014
... Armor thins to solar **flare** seething purple burst Thirst, fugitive morsel drifting violet lagoon Barnacle me, my ... mutually hollow trading a sudden **flare** from solar cavities slowly merging ...

The education of Green Lantern: culture and ideology

Google Scholar › search.proquest.com › Moore J › The Journal of American Culture
Published 2003
... Lantern is temporarily rendered powerless by the **gas** fumes from canisters being ... **oil** on those deboarding the plane. Senator Jeremiah Clutcher's face is covered with the thick, black **oil**. ...

Economic Evaluation of Magnesite Deposits of Khuzdar, Balochistan, Pakistan

Google Scholar › www.uok.edu.pk › Bashir E › Karachi University Journal of Science
Published 2008
... Minerals are one of the principal **natural** resources essential for ... Recently the **mining** activities are increased but their exact ... and logistic support during **field** work. We sincerely thank the ...

Tag Archives: France

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Published 2003
... **Field**, the biggest American air base outside the United States. Even the exploitation of vast **oil** ... the Mediterranean Sea, and the **mining** of **natural gas** discovered in the Syrian territory ...

Best of the West 2011: New Stories from the Wide Side of the Missouri

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Published 2011
... memories of the time he was once held up at a **gas** station. ... cyanide and arsenic heap-leach **mining**--past the charred and ... at a time, reclearing the **field** each spring and summer while ...

TIMES

Google Scholar › www.queenstimes.com › Schirmer U
Published 1965
... that the United States will ban imports of Russian **oil**, **natural gas**, and coal, New York Attorney Letitia James warned **oil** companies and **gas** stations that price gouging is illegal and ...

Ford at Trafford Park

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... within the context of industrial capitalism:the **natural** counterpart to 'mass production'. ... of steam and **gas** engines, steam turbines and every product of electrical engineering.Themain ...

The Appalachian Trail hiker: Trail-proven advice for hikes of any length

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Published 2004

Cosmonaut Keep

Google Scholar › scholar.google.com › MacLeod K
Published 2002

Don du sang à Melle

Google Scholar › blogs.paysmelrois.org › Vergnault J
Published 2012
G., they will be able to play them in the living room at no additional cost. Most of the application can be downloaded free of cost and to make game lovers it's like a cherry on the food. ...

Kingdoms of experience: Everest, the unclimbed ridge

Google Scholar › scholar.google.com › Greig A
Published 2003

An X-Ray into the Exo-Prosthetic Superbody

Google Scholar › link.springer.com › Durdenhoeffer L › Anatomy of the Superhero Film

Published 2017
This chapter elaborates on the exo-prosthetic somatotype, which features the expulsion of the superhero's organs, fluids, skeletal structures, or their objective correlatives into remote ...

John E Kennedy Space Center

Google Scholar • ntrs.nasa.gov • GP K
Published 1974
... CEC Model 104 mass spectrometer with **gas** chromatograph interface, and a CEC Model ... the coating under conditions more severe than ordinary **field** conditions. In most instances, flat 4...

A Ghost in the Music

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Published 1996

Julie and Julia: 365 Days, 524 recipes, 1 tiny apartment kitchen

Google Scholar • scholar.google.com • Powell J
Published 2005

Islam Outside the Arab World

Google Scholar • www.tandfonline.com • Malik I • Asian Affairs
Published 2001
... exploitation of a significant **natural** resource, **oil**, in the Muslim ... either: it is a **field** for endless anthropological and religious ... , of enormous new **oil** and **gas** reserves within the Caspian. ...

Sex, Surrealism, Dalí and Me: The Memoirs of Carlos Lozano

Google Scholar • books.google.com • Thurlow C
Published 2000
... There was a dash of patchouli **oil** on my temples and a whisper of kohl about my eyes. ... 'Patchouli **oil**,' Dali told her and I was amazed that he should know, as I would always be amazed ...

Patent TW310421B

~~TW~~ • TW310421B • Matsushita Electric Ind Co Ltd
Priority 1993-07-27 • Filed 1995-01-26 • Granted 1997-07-11 • Published 1997-07-11
Printed by the Industrial and Consumer Cooperative of the Central Standardization Bureau of the Ministry of Economic Affairs and applied for a patent Fan 1 -Seed light basket set • It has:-Base 1 Mao _ segment, which can be recorded in the bed logic with the presence of ja and ji pen The star # 中 ...

Children of the Ghetto: Being Pictures of a Peculiar People

Google Scholar • books.google.com • Zangwill I
Published 1892
... -marked epoch to invest in new everythings from ~~oil~~-cloth to cups and saucers. Especially was ... The single jet of **gas**-light depending from the ceiling flared upon the strange simian faces, ...

Toronto, capital of Ukraine: the ends of desire and the beginning of history in Janice Kulyk Keefer's The Green Library

Google Scholar • ojs.lib.uwo.ca • Babiak P • ESC: English Studies in Canada
Published 2003
... that have been shuffled off the **field**, thus turning our literary ... holes in the ground, like **garbage**? When we have looked on in ... When the horse died of **natural** causes Oleg taunted the ...

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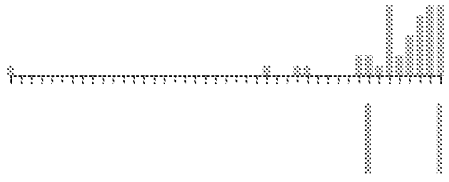

Relative count of top 5 values

Assignees	Inventors	CPCs
KATA Systems LLC		2.3%
Matsushita Electric Ind Co Ltd		2.3%

Patents (blockchain mining oil field natural gas flare waste) before:priority:20

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System and Method for Oil and Condensate Processing

US · US20180274347A1 · Joseph A. Riotto · KATA Systems LLC
Priority 2014-05-20 · Filed 2018-05-25 · Published 2018-09-27
A system and method for the on-site separating and treating of a hydrocarbon liquid stream at an oil and gas production site is disclosed. The system comprises an oil and condensate distillation unit and a vapor recovery unit. In one embodiment, the oil and condensate distillation unit operates at ...

The Myth Gap: What Happens when Evidence and Arguments Aren't Enough?

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Google Scholar · www.academia.edu · Hsu H · American Literature
Published 2016
... asserting a unit for comparison or a common **field** within which to arrange specificities, but ... odor of **gas**, of old walls, dusty plaster, and over it all the heavy, sour smell of **garbage**—a ...

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Published 2013

Zia summer

Google Scholar · scholar.google.com · Anaya R
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Cyberspies

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Intercept: The secret history of computers and spies

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Published 2015

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Published 2017
... Other pioneers in the **field** include Fujitsu FEELthym , a ... biggest consumer of **oil** and to have a larger **gas** market than ... vessels turn to LNG (liquefied **natural gas**). Depending on the type ...

General environmental hazards in agriculture communities

Google Scholar · scholar.google.com · Donham K · Agricultural Medicine
Published 2016

Politics of the Imagination: The Life, Work and Ideas of Charles Fort

Google Scholar · books.google.com · Bennett C
Published 2009
... Our world has two sets of **natural** laws. One set tells us ... many such incidents occur in any **field**, they are still nowhere ... reference, does not see "**gas** lights and kerosene lamps and electric ...

Michael Watts

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Published 2009
... National **oil** production (crude and **natural gas** liquids) is ... massive Bonga **oil field** -- Nigeria's largest **oil field**, lying within ... of the world **flare** emissions -- after a half century of **oil** and **gas** ...

Sustainable manure management

Google Scholar · eprints.nwisrl.ars.usda.gov · Leytem A · Sustainable animal agriculture
Published 2013
... in the production of pyrolysis **oil** and a low-BTU **gas**), gasification (... it for energy generation or **flare** the CH4 help mitigate this ... Anaerobic digestion is a **natural** biological process by which ...

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Published 2011
... find related information, 3) details about **natural** chemicals found in source waters, and 4) a ... it'sa **gas** that turns to liquid when it touches cold air. In liquid form, it defies gravity. It's one of ...

Escaping God's Closet: The Revelations of a Queer Priest

Google Scholar · books.google.com · Mayes S
Published 2012
... that what I did with it was **natural** but forbidden, did not sit well ... My father would pick up his **gas** mask and a black steel ... It was, we later learned, an air mine that, following the **flare**, had ...

Daybreak Zero

Google Scholar · scholar.google.com · Barnes J
Published 2011

Operation Shakespeare: The True Story of an Elite International Sting

Google Scholar · books.google.com · Shiffman J
Published 2014
... sudden insurgent signals: a **flare** launch, blinking lights from a ... accompany undercover agents into the **field**, an unusual trait ... 500,000 injectors of a nerve **gas** antidote to the Iraqi army. A ...

Ground Up: A Novel

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Published 2009

Defuzzification within a multicriteria decision model

Google Scholar · www.worldscientific.com · Opricovic S · International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems
Published 2003
In many cases, criterion values are crisp in nature, and their values are determined by economic instruments, mathematical models, and/or by engineering measurement. However, ...

Major On-going Cases with Information Concealment Practice

Google Scholar · link.springer.com · Chernov D · Man-made Catastrophes and Risk Information Concealment
Published 2016
... of **natural gas** before 2020 7 and net exporter of **oil** and **gas** ... of shale **oil** from depleted conventional fields) to **flare** around ... recoverable from a potential **oil** or **gas field**--estimates made ...

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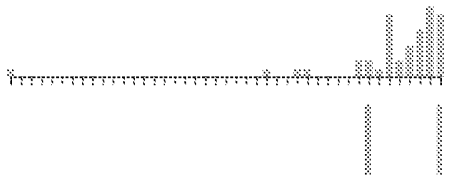

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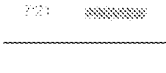

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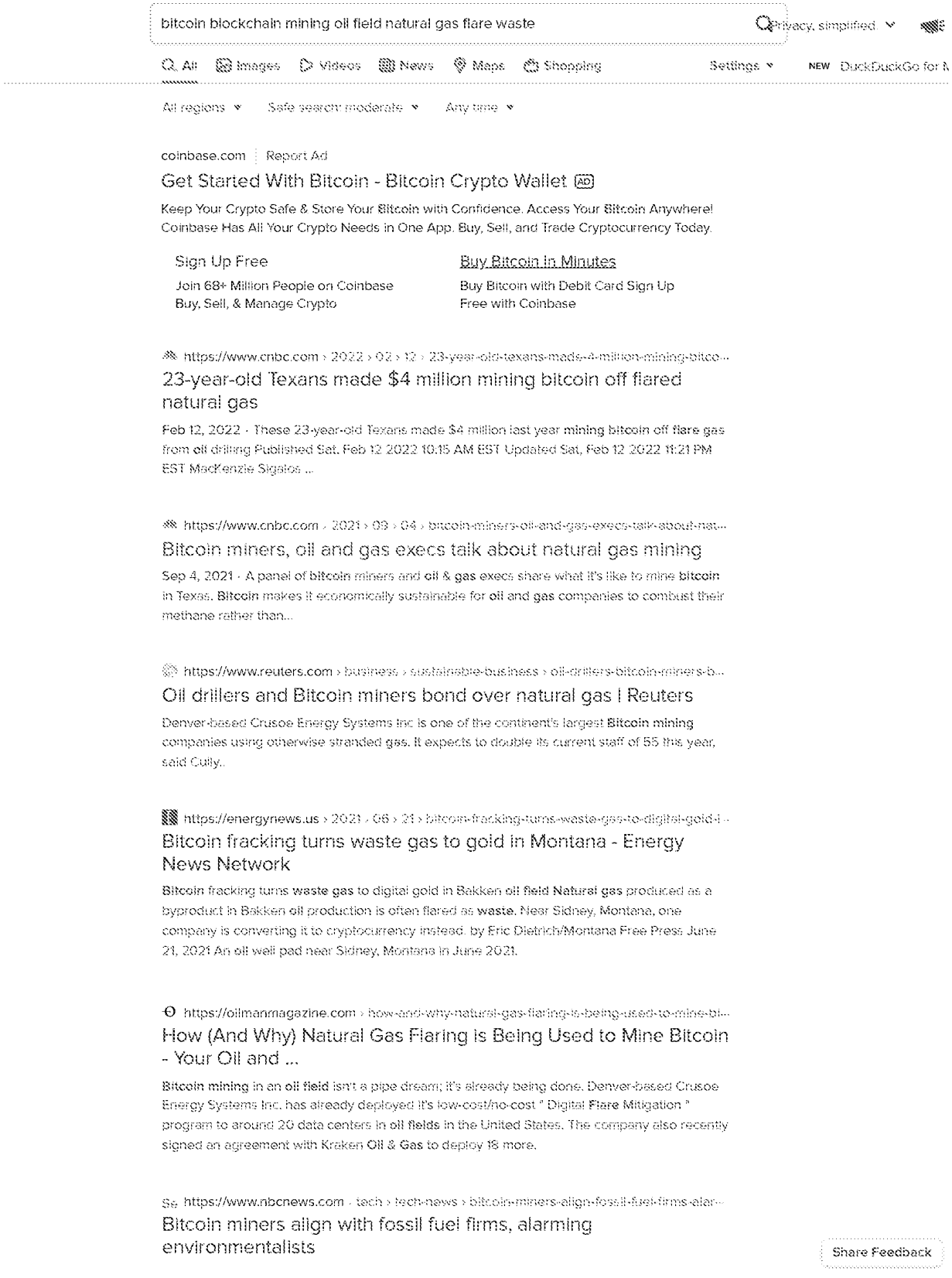
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of flared gas by up to 70% With Smartgrid system EZ Blockchain developed a plug-and-play solution to turn natural gas flaring into monetization by deploying the EZ Smartgrid Flaring Mitigation System right on the oil well pads to turn wasted natural gas into a new revenue stream, meeting new environmental regulations along the way.

https://www.nbcnews.com › tech › tech-news › bitcoin-miners-align-fossil-fuel-firms-alar...

Bitcoin miners align with fossil fuel firms, alarming ...

The gas Crusoe is using, bought from the oil field's owner, Kraken Oil & Gas, would otherwise be burnt off in flares, emitting CO2 and other pollutants. Selling the gas to crypto miners is a...

Se https://oilmanmagazine.com › how-and-why-natural-gas-flaring-is-being-used-to-mine-bi...

How (And Why) Natural Gas Flaring is Being Used to Mine ...

Bitcoin mining in an oil field isn't a pipe dream; it's already being done. Denver-based Crusoe Energy Systems Inc. has already deployed it's low-cost/no-cost " Digital Flare Mitigation " program to around 20 data centers in oil fields in the United States. The company also recently signed an agreement with Kraken Oil & Gas to deploy 18 more.

Se https://vnexplorer.net › bitcoin-miners-and-oil-and-gas-execs-mingled-at-a-secretive-me...

Bitcoin miners and oil and gas execs mingled at a ...

Share Feedback

Bitcoin miners and oil and gas execs mingled at a secretive meetup in Houston - here's what they talked about 04/09/2021 On a residential back street of Houston, in a 150,000 square-foot warehouse safeguarding high-end vintage cars, 200 oil and gas execs and bitcoin miners mingled, drank beer, and talked shop on a recent Wednesday night in August.

https://www.cummins.com › news › 2019 › 08 › 23 › turning-flare-gas-waste-electricity-a...

Turning flare gas waste into electricity and heat ...

Turning flare gas waste into electricity and heat. As the global concern for gas flaring grows, oil companies will be investing in technologies that utilize the unburned fuel without harming the environment or pocketbook. While generally considered a waste byproduct, flare gas - the excess natural gas that is removed from refineries by ...

https://www.globalpwr.com › industrial-power-solutions › field-gas-flaring

Generators for Field Gas & Flaring in the Oil and Gas Industry

Instead of burning-off this natural gas, having it essentially going to waste and contributing emissions that harm the environment, it is being used to power the generators that in turn power their oil well pump jacks, man-camps, and other buildings. When compared to diesel fuel, the cost savings are enormous.

More Results

Discover Map bitcoin blockchain mining oil field natural gas fla... TIC

1 - 50

Relevance

Blockchain mine at oil or gas facility

Methods and systems of operating a blockchain mining device using natural gas produced at a hydrocarbon production, storage, or processing site/facility. A generator may be retrofitted to an existing prime mover used to pump the well, and the generator may be used to power the blockchain mining...

UPSTREAM DATA INC

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Blockchain mine at oil or gas facility

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UPSTREAM DATA INC

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WO2019145201A1 | WIPO Applications | 2018-08-16 | 4

Systems and methods for generating and consuming power from natural gas

Systems and methods are provided to mitigate flaring of natural gas. A natural gas processing system may process raw natural gas into a fuel gas stream that may be used to power any number of on-site power generation modules. In turn, the power generation modules may convert the fuel gas stream into...

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Systems and methods for generating and consuming power from natural gas

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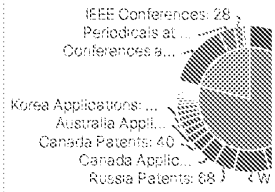
CRUSOE ENERGY SYS INC

US10862307 | US Patents | 2020-12-08 | 4

Systems and methods for integrated management of associated gas and produced water at oil well

Collections



Publication Date

Charts based on top 1500 results

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Result 1

Discover Map blockchain mining oil field natural gas flare waste TIC

1 - 50

Blockchain mine at oil or gas facility

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Systems and methods for generating and consuming power from natural gas

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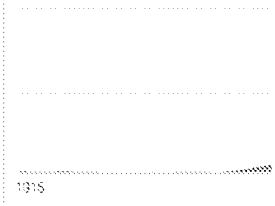
Natural gas power generation and consumption system and method

Result 1

Relevance

Collections

Publication Date



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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	11	((("BARBOUR") near3 ("Stephen"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/15 10:20 AM
L2	0	((("UPSTREAM") near3 ("DATA") near3 ("INC"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/04/15 10:21 AM
L3	44658	(G06Q50/06 OR E21B41/00 OR F02M21/0209 OR F02M21/0218 OR G05B15/02 OR G06F16/2315 OR G06Q10/06313 OR H04L67/104 OR H04L67/1097 OR G06Q2220/00 OR H02J9/06 OR G06Q10/06).cpc.	(USPAT)	OR	ON	ON	2022/04/15 10:21 AM
L5	4	1 AND (blockchain OR block$chain OR "block chain")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:22 AM
L6	5672	3 AND (blockchain OR block$chain OR "block chain")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:22 AM
L7	159	3 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:22 AM
L8	130	3 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas" AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/15 10:23 AM
L9	15	("7525207" | "7742830" | "8683823" | "8832476" | "8849469" | "9100089" | "9310855" | "9342375" | "9383791" | "20130160059" | "20140096837" | "20150321739").pn. OR ("10822992").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/15 12:57 PM
L10	2	"20080135238"	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM
L11	2	"20080135238"	(US-PGPUB; USPAT; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM

L12	3	"20160261685"	(US-PGPUB; USPAT; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/16 07:47 AM
L13	46	("20030196798" OR "20040239499" OR "20050179263" OR "20080135238" OR "20090107671" OR "20100038907" OR "20110199862" OR "20130002443" OR "20130065669" OR "20130112419" OR "20130166455" OR "20130245947" OR "20140237611" OR "20140237614" OR "20140316984" OR "20150261269" OR "20150262139" OR "20150292303" OR "20150294308" OR "20150310424" OR "20150310476" OR "20150356524" OR "20150358943" OR "20150369013" OR "20160010445" OR "20160052814" OR "20160109122" OR "20160112200" OR "20160125040" OR "20160164672" OR "20160214715" OR "20160218879" OR "20160261404" OR "20160261685" OR "20160283920" OR "20160300234" OR "20160319653" OR "20160328713" OR "20160330031" OR "20160330035" OR "20160342977" OR "20160362954" OR "7542947" OR "8156206" OR "8483715" OR "9495668").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:55 AM
L14	6	("20120077427" OR "20120300291" OR "20120300391" OR "20160128238" OR "20170280594" OR "20200040272").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:56 AM
L15	46	("20030196798" OR "20040239499" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/16 07:56 AM

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L16	8	((US-20190063252-A1 OR US-20190042990-A1 OR US-20140096837-A1 OR US-20080135238-A1 OR US-20160261685-A1).did. AND PGPB.dbnm.) OR ((US-8849469-B2).did. AND USPT.dbnm.) OR ((US-20080135238-A1 OR US-20160261685-A1).did. AND DWPI.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM

L17	6	16 AND block$	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM
L18	1	16 AND block$chain	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:06 AM
L19	132	13 OR 14 OR 15	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/16 09:07 AM
L20	1	19 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas" AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:07 AM
L21	17	19 AND (blockchain OR block$chain OR "block chain") AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:08 AM
L22	1	19 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:11 AM
L23	4	("2020/0040272").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:11 AM
L24	128	("5142672" | "5367669" | "5913046" | "6288456" | "6633823" | "7143300" | "7376851" | "7647516" | "7702931" | "7779276" | "7861102" | "7921315" | "7970561" | "8001403" | "8006108" | "8214843" | "8260913" | "8374928" | "8447993" | "8571820" | "8627123" | "8639392" | "8700929" | "8706915" | "8719223" | "8789061" | "8799690" | "9003211" | "9003216" | "9026814" | "9027024" | "9143392" | "9207993" | "9218035"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:11 AM

		| "9282022" | "9542231" | "9552234" | "9645596" | "9994118" | "10367353" | "10367535" | "10444818" | "10452127" | "10452532" | "10497072" | "10608433" | "10618427" | "10637353" | "20020072868" | "20020158749" | "20030023885" | "20030037150" | "20030074464" | "20040117330" | "20050203761" | "20060161765" | "20080030078" | "20080094797" | "20090055665" | "20090070611" | "20090078401" | "20090089595" | "20090216910" | "20100211810" | "20100235004" | "20100280675" | "20100328849" | "20110072289" | "20110238342" | "20110239010" | "20120000121" | "20120072745" | "20120300524" | "20120306271" | "20120324259" | "20130006401" | "20130063991" | "20130086404" | "20130117621" | "20130187464" | "20130227139" | "20130304903" | "20130306276" | "20140070756" | "20140137468" | "20140180886" | "20140379156" | "20150012113" | "20150121113" | "20150155712" | "20150212122" | "20150229227" | "20150277410" | "20150278968" |					

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L25	9	24 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:12 AM
L26	65	("6288456" | "6633823" | "7143300" | "7647516" | "7702931" | "7779276" | "7861102" | "7921315" | "7970561" | "8001403" | "8006108" | "8214843" | "8374928" | "8447993" | "8571820" | "8627123" | "8789061" | "8799690" | "9003211" | "9003216" | "9026814" | "9207993" | "9218035" | "9552234" | "20080030078" | "20080094797" | "20090055665" | "20100211810" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:12 AM

		"20100328849" | "20110238342" | "20120000121" | "20120072745" | "20120300524" | "20130006401" | "20130063991" | "20130086404" | "20130187464" | "20130306276" | "20140137468" | "20140379156" | "20150155712" | "20150229227" | "20160198656" | "20160212954" | "20160324077" | "20170104336" | "20180144414").pn. OR ("10367353").urpn. AND (PGPB | USPT | USOC).dbnm.					
L27	18	26 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:12 AM
L28	2615	(blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:13 AM
L29	156	28 AND (blockchain OR block$chain OR "block chain") AND ((oil OR "natural gas") SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:13 AM
L30	0	28 AND (blockchain OR block$chain OR "block chain") AND ((oil OR "natural gas") SAME generator SAME server SAME mining)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:14 AM
L31	5	28 AND ((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND ((oil OR "natural gas") SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:14 AM
L32	36	28 AND ((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND ((oil OR "natural gas"))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:15 AM
L33	22	28 AND ((blockchain OR block$chain OR "block chain") SAME	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:16 AM

		server SAME mining) AND (generator)					
L34	121	((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND (generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:16 AM
L35	1024	((blockchain OR block$chain OR "block chain") SAME mining) AND (generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:19 AM
L36	42	((blockchain OR block$chain OR "block chain") SAME mining) AND (generator WITH gas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:19 AM
L37	439	((blockchain OR block$chain OR "block chain" OR "distributed ledger") SAME mining SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:22 AM
L38	6	37 AND (server SAME electric$4 SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:22 AM
L39	8	37 AND (server SAME (electric$4 OR power) SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:24 AM
L40	176	37 AND (server SAME (electric$4 OR power))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:25 AM
L41	717	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME mining SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:26 AM
L42	9	41 AND (server SAME electric$4 SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:27 AM
L43	3	"9982516"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:27 AM
L44	2	"20150337218"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:28 AM
L45	107	41 AND (vented OR flared OR wast$4) AND (natural OR methane OR gas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:34 AM
L46	9	41 AND (server SAME electric$4 SAME power SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:37 AM
L47	4507	((blockchain OR	(US-PGPUB; USPAT;	OR	ON	ON	2022/04/16

		block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME mining)	EPO; JPO)				09:38 AM
L48	17	47 AND (server SAME electric$4 SAME power SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:38 AM
L49	4765	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:05 AM
L50	17	49 AND (server SAME electric$4 SAME power SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L51	39	49 AND ((computer OR server) SAME electric$4 SAME power SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L52	156	49 AND ((computer OR server) SAME (electric$4 OR power) SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L53	738	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining) SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:24 AM
L54	10	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining) SAME server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:24 AM

L55	339	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:25 AM
L56	952	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:27 AM
L57	98	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) SAME (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:27 AM
L58	85	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME (power WITH generator))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:28 AM
L59	39	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:30 AM

		cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME (electric$4 WITH generator))					
L60	33	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME ((portable OR mobile) WITH generator))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:31 AM
L61	4045	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:31 AM
L62	1936	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining OR verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:32 AM
L63	58	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining) SAME (verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:32 AM

L64	97	"7525207"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L65	2	"20140096837"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L66	3	"8683823"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L67	4	"9100089"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:35 PM
L68	1	"20150321739"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:35 PM
L69	156	49 AND ((computer OR server) SAME (electric$4 OR power) SAME (generator OR generetion))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:39 PM
L70	102	69 AND ("natural gas", OR methane OR flare OR burn$3 OR waste biogas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:42 PM
L71	1	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining) SAME (verify OR verification OR verifying)) WITH (server)	(EPO; JPO)	OR	ON	ON	2022/04/16 02:42 PM
L72	1	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining) (verify OR verification OR verifying)) (server)	(EPO; JPO)	SAME	ON	ON	2022/04/16 02:43 PM
L73	13	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)	(EPO; JPO)	SAME	ON	ON	2022/04/16 02:43 PM
L74	14	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR	(EPO; JPO)	AND	ON	ON	2022/04/16 02:44 PM

		cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)					
L75	892	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)	(FPRS; EPO; JPO)	AND	ON	ON	2022/04/16 02:44 PM
L76	23	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining) (verify OR verification OR verifying)) (server)	(FPRS; EPO; JPO)	SAME	ON	ON	2022/04/16 02:44 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

1 Making Crimes?: Technology, Law, and DIY Firearms Tallman, Mark A., ProQuest Dissertations and Theses ProQuest Dissertations Publishing, (2017) KWIC

Found in: ProQuest Dissertations and Theses Professional

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1 Making Crimes?: Technology, Law, and DIY Firearms Tallman, Mark A., ProQuest Dissertations and Theses ProQuest Dissertations Publishing, (2017) KWIC

Found in: ProQuest Dissertations and Theses Professional

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)		
	Application Number	16484728
	Filing Date	2018-02-06
	First Named Inventor	Stephen Barbour
	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					
If you wish to add additional U.S. Patent citation information please click the Add button.						

U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20160330031		2016-11-10	Drego et al.	
If you wish to add additional U.S. Published Application citation information please click the Add button.						

FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	2016067295	WO		2016-05-06	Spondoolies Tech LTD.		☐
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NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16484728
	Filing Date	2018-02-06
	First Named Inventor	Stephen Barbour
	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

	1	THESELFGOVERNED, Electricity Consumption: Bitcoin mining vs The current global financial system, Reddit, posted June 5, 2014, 15 pages.	☐
	2	MIA BENNETT, Blog - Bitcoin mining: The next rush to hit the Arctic?, posted February 6, 2018, 14 pages.	☐
	3	PYMNTS, China Moves To Squeeze Out Bitcoin Mining, posted January 10, 2018, 7 pages.	☐
	4	Cryptocurrency investors eye provinces with low electricity rates, The Fraser Institute Blog, posted January 31, 2018, 3 pages.	☐
	5	JCHI2210, Free natural gas, is it worth it to use a Natural gas generator?, Bitcoin Forum, posted August 27, 2017, 7 pages.	☐
	6	AMANDA STEPHENSON, Genalta Power earns carbon offsets for turning flare gas into electricity, Calgary Herald, posted September 30, 2014, 6 pages.	☐
	7	KENYN, Saving the environment through bitcoin; one transaction equals 117 recycled bottles, Reddit, posted February 26, 2017, 17 pages.	☐
	8	KINOLVA, Shower Thought: Mining Bitcoin for Heat / Hot Water?, Reddit, posted January 28, 2017, 14 pages.	☐
	9	The Best Places in The World to Mine Bitcoin, PRNewswire, posted January 18, 2018, 8 pages.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/JAMES A REAGAN/ (08/21/2022)	Date Considered	08/21/2022

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☑ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/RobertNissen#64256/	Date (YYYY-MM-DD)	2022-05-31
Name/Print	Robert A. Nissen	Registration Number	64256

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16484728
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: STEPHEN BARBOUR | Attorney Docket No.: 91A-3US

Application No.: 16/484,728 | Art Unit: 3688 / Confirmation No.: 1944

Filed: August 08, 2019 | Examiner: Reagan, James A

Title: BLOCKCHAIN MINE AT OIL OR GAS FACILITY

AMENDMENT AFTER NON-FINAL REJECTION

July 4, 2022

TO THE COMMISSIONER FOR PATENTS:

INTRODUCTORY COMMENTS

In response to the official action of April 19, 2022, the Applicant requests that the patent office please amend the above identified application as follows:

Amendments to the Claims are reflected in the listing of the claims, which begins on page 2 of this paper.

Remarks/Arguments begin on page 10 of this paper.

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A system comprising:

a source of combustible gas produced from [[an oil]] a facility selected from a group consisting of a hydrocarbon production, storage, or processing facility;

a generator connected to the source of combustible gas to receive a continuous flow of combustible gas to power the generator; and

[[a]] blockchain mining devices connected to the generator;

in which:

the blockchain mining devices each have a mining processor and are connected to a network interface;

the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;

the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database;

the network is a peer-to-peer network;

the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network; and

the blockchain database stores transactional information for a digital currency.

2. (Original) The system of claim 1 isolated from a sales gas line and an external electrical power grid.

3. (Currently amended) The system of claim 1 in which:

the [[oil]]source of combustible gas and the ~~production, storage, or processing~~ facility comprise[[s]] a remote well selected from a group consisting of a remote oil or gas well;

~~the source of combustible gas comprises the remote oil well;~~ and

the remote [[oil]] well is connected to produce [[a]]the continuous flow of combustible gas to power the generator.

4. (Original) The system of claim 3 further comprising a combustion engine connected to the source of combustible gas and connected to drive the generator.

5. (Currently amended) The system of claim 4 in which the combustion engine is a prime mover that is connected to produce oil from the remote [[oil]] well.

6. (Currently amended) The system of claim 4 in which the combustion engine is a first combustion engine, and further comprising a second combustion engine that is a prime mover that is connected to produce oil from the remote [[oil]] well.

7. (Currently amended) The system of claim 1 in which:

the ~~oil production, storage, or processing~~ facility comprises a unit selected from a group consisting of an oil storage or processing unit;

the source of combustible gas comprises the ~~oil storage or processing~~ unit, which has a gas outlet connected to supply combustible gas to operate the generator; and

the ~~oil storage or processing~~ unit is connected to receive oil produced from a remote oil well.

8. (Currently amended) The system of claim 1 in which the generator and blockchain mining devices are located adjacent to the ~~oil production, storage, or processing~~ facility.

9. (Currently amended) The system of claim 1 in which the ~~oil production, storage, or processing~~ facility comprises ~~a remote oil well, which comprises~~ a plurality of remote wells selected from a group consisting of remote oil or gas wells, and one or both of the following conditions are satisfied:

the plurality of remote [[oil]] wells are located on a multi-well pad; or

the plurality of remote [[oil]] wells include a satellite well.

10-11. (Cancelled)

12. (Currently amended) The system of claim [[10]]1 in which ~~a controller~~ the system is ~~connected~~ configured to modulate a power load level exerted by the blockchain mining devices on the generator, by increasing or decreasing the mining activity of the mining processor.

13. (Currently amended) The system of claim 12 in which[[:]]

~~the mining processor comprises a plurality of mining processors; and~~

the ~~controller~~ system is ~~connected~~ configured to modulate the maximum power load level by selecting one or more actions from a group of actions consisting of increasing or decreasing a maximum number of mining processors that are engaged in mining transactions.

14. (Cancelled)

15. (Currently amended) The system of claim [[14]]13 in which the ~~controller~~ system is ~~connected~~ configured to modulate the power load level in response to variations in a production rate of combustible gas from the remote [[oil]] well.

16. (Currently amended) The system of claim [[14]]13 in which:

a production rate of combustible gas from the remote [[oil]] well varies between a daily minimum production rate and a daily maximum production rate; and

while the production rate is above the daily minimum production rate, the controller is set to limit the power load level to at or below a power level producible by the generator when the production rate is at the daily minimum production rate.

17. (Original) The system of claim 16 in which the controller is set to divert to a load bank excess electricity produced by the generator.

18. (Currently amended) The system of claim [[14]]13 in which:

a production rate of combustible gas from the remote [[oil]] well varies between a daily minimum production rate and a daily maximum production rate;

the controller is set to limit the power load level to above a power level producible by the generator when the production rate is at the daily minimum production rate; and

a backup source, selected from a group consisting of fuel or electricity, is connected make up a shortfall in fuel or electricity, respectively, required to supply the blockchain mining devices with the power load level.

19. (Currently amended) The system of claim 1 in which a controller is connected to operate a cooling system to maintain the blockchain mining devices within a predetermined operating range of temperature.

20. (Currently amended) The system of claim 1 in which the blockchain mining devices are housed in a portable enclosure that is structured to one or more of form ~~mounted on~~ a skid or be mounted on a trailer.

21. (Currently amended) The system of claim 20 in which the ~~skid or trailer~~ portable enclosure comprises a generator driven by an engine, which is connected to the source of combustible gas.

22. (Original) The system of any claim 21 in which the engine comprises a turbine.

23. (Currently amended) The system of claim [[1]] 20 in which the ~~blockchain mining device~~ portable enclosure comprises an intermodal transport container.

24. (Currently amended) A method comprising:

producing electricity using a generator and a source of combustible gas produced at a facility selected from the group consisting of a hydrocarbon production well, storage, or processing facility, ~~to produce electricity to~~ and operating[[e a]] blockchain mining devices located at the ~~hydrocarbon production well, storage, or processing~~ facility, respectively, using the electricity, in which:

the generator is connected to the source of combustible gas, in which the facility is connected to produce a continuous flow of combustible gas to power the generator;

the blockchain mining devices each have a mining processor and are connected to a network interface;

the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;

the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database;

the network is a peer-to-peer network;

the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network; and

the blockchain database stores transactional information for a digital currency.

25. (Currently amended) The method of claim 24 further comprising, prior to using the source of combustible gas:

one or both disconnecting or diverting the source of combustible gas from a combustible gas disposal device at the ~~hydrocarbon production well, storage, or processing~~ facility; and

connecting the source of combustible gas to operate the blockchain mining devices.

26. (Currently amended) The method of claim 24 further comprising:

connecting the source of combustible gas to operate the blockchain mining devices; and

diverting gas from a combustible gas disposal ~~or storage~~ device to operate the blockchain mining devices.

27. (Currently amended) The method of claim 25 in which the combustible gas disposal ~~or storage~~ device comprises one or more of a flare, a vent to the atmosphere, an incinerator, or a burner.

28. (Currently amended) The method of claim 24 in which the ~~hydrocarbon production well, storage, or processing~~ facility is selected from a group consisting of ~~comprises~~ an oil or gas well that is isolated from a sales gas line and an external electrical power grid.

29. (Currently amended) The method of claim 24 in which the source of combustible gas is a remote well selected from a group consisting of a remote oil or gas well~~, and further comprising producing a continuous flow of combustible gas to power a generator connected to operate the blockchain mining device~~.

30. (Original) The method of claim 29 in which producing further comprises supplying combustible gas to a combustion engine that is connected to drive the generator.

31. (Currently amended) The method of claim 30 ~~in which the source of combustible gas is a remote oil well, and~~ further comprising using the combustion engine as a prime mover to produce oil from the remote [[oil]] well.

32. (Original) The method of claim 31 in which, prior to using the source of combustible gas, the combustion engine is under loaded as the prime mover, and further comprising connecting the generator to a power takeoff connected to the combustion engine.

33. (Currently amended) The method of claim 30 in which the combustion engine is a first combustion engine, the remote well is a remote oil well, and further comprising:

prior to supplying combustible gas to the first combustion engine, connecting the first combustion engine to receive combustible gas from the remote oil well; and

using a second combustion engine as a prime mover to produce oil from the remote oil well.

34. (Currently amended) The method of claim 29 further comprising operating the blockchain mining devices to:

mine transactions with the blockchain mining devices; and

communicate wirelessly through the internet to communicate with a blockchain database.

35. (Currently amended) The method of claim 34 further comprising modulating~~, using a controller,~~ a power load level exerted by the blockchain mining device<u>s</u> on the generator, by <u>selecting an action from a group of actions consisting of</u> increasing or decreasing<u>,</u> a mining activity of the blockchain mining device<u>s</u>.

36. (Currently amended) The method of claim 35 in which:

~~the blockchain mining device comprises a plurality of mining processors; and~~

modulating comprises modulating the power load level by increasing or decreasing a maximum number of mining processors that are engaged in mining transactions.

37. (Currently amended) The method of claim 36 in which modulating comprises modulating the power load level in response to variations in a production rate of combustible gas from the remote ~~oil or gas~~ well.

38. (Currently amended) The method of claim [[36]]<u>35</u> in which:

a production rate of combustible gas from the remote ~~oil or gas~~ well varies between a daily minimum production rate and a daily maximum production rate; and

modulating comprises limiting, while the production rate is above the daily minimum production rate, the power load level to at or below a power level producible by the generator when the production rate is at the daily minimum production rate.

39. (Original) The method of claim 38 further comprising diverting to a load bank excess electricity produced by the generator.

40. (Currently amended) The method of claim [[36]]<u>35</u> in which:

a production rate of combustible gas from the remote ~~oil or gas~~ well varies between a daily minimum production rate and a daily maximum production rate;

modulating comprises limiting the power load level to above a power level produced by the generator when the production rate is at the daily minimum production rate; and

supplying from a backup source, which is selected from a group consisting of a backup fuel or electricity source, a shortfall in fuel or electricity, respectively, required to supply the blockchain mining devices with the power load level.

41. (Original) The method of claim 40 in which the power load level is limited to above a power level produced by the generator when the production rate is at the daily maximum production rate.

42. (New) The system of claim 20 in which the portable enclosure has the form of a box with walls, a top, and a base, with one or more access doors formed in the walls.

43. (New) The system of claim 1 further comprising a combustible gas disposal device, at the facility, the combustible gas disposal device being connected to receive combustible gas from the source of combustible gas.

44. (New) The system of claim 43 further comprising a valve connected upstream of the generator to receive the continuous flow of gas from the source of combustible gas, and selectively supply the continuous flow of gas to the generator, the combustible gas disposal device, or both the generator and the combustible gas disposal device, to selectively divert the continuous flow of gas to the combustible gas disposal device, the generator, or both the generator and the combustible gas disposal device, respectively.

REMARKS

This amendment is responsive to the Office Action mailed April 19, 2022. The Applicant has carefully considered the cited art and the comments provided in the Office Action. Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the following remarks.

Examiner Interview

Applicant appreciates Examiner Reagan's very helpful participation in an Examiner Interview on June 15, 2022. During the interview, the cited prior art was discussed, as well as proposed amendments that would further distinguish the claims from the cited art.

Supplemental Information Disclosure Statement

Applicant submits herewith a supplemental information disclosure form, and requests the examiner consider each reference listed within.

Amendments to the Claims

The independent system claim (Claim 1) and independent method Claim 24 are amended to:

- clarify using Markush form that the facility is selected from a group consisting of a hydrocarbon production, storage, or processing facility;
- clarify that a generator is connected to the source of combustible gas to receive a continuous flow of combustible gas to power the generator, as supported by the application as filed, for example original Claims 1, 3, 14, and 29;
- clarify that there are plural blockchain mining devices, as supported by the application as filed, for example original Claim 13; and
- clarify that the blockchain mining devices each have a mining processor and are connected to a network interface, the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database, the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the

blockchain database, the network is a peer-to-peer network, the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network, and the blockchain database stores transactional information for a digital currency, as supported by the application as filed, for example original Claims 10-11, 33, and Fig. 4.

In addition, Claim 24 is further amended to clarify the "using" step as involving producing electricity and operating using the electricity, as supported by the application as filed.

Various of the dependent claims are amended for clarity, for consistency with the amendments to Claims 1 and 24, and/or to refer optional components (such as an oil or gas well) in Markush form as supported by the application as filed.

Previous Claims 10-11 are cancelled according to the amendment to Claim 1.

Claims 12, 13, 15, and 35 are amended to relax the controller requirement, and clarify the modulating step / configuration step, as supported by the application as filed, for example paragraphs 14, 71, and 72, original Claims 35-40, and the original abstract.

Previous Claim 14 is cancelled.

Claim 20 is amended to clarify that the blockchain mining devices are housed in a portable enclosure, which is structured to one or more of form a skid or be mounted on a trailer, as supported by the application as filed, for example original Claim 20.

Claim 23 is amended to clarify that the portable enclosure comprises an intermodal transport container, as supported by the application as filed, for example paragraph 65 and original Claim 23.

Claim 25 is clarified to recite one or both disconnecting or diverting, as supported by the application as filed, for example paragraphs 14, 47, and 48, and Fig. 3.

Claims 26 and 27 are amended to remove reference to a storage device.

New Claim 42 is added to clarify that the portable enclosure has the form of a box with walls, a top, and a base, with one or more access doors formed in the walls, as supported by the application as filed, for example paragraphs 13, 20, 45, and 65, and Fig. 4.

New Claim 43 is added to clarify that there is a combustible gas disposal device, at the facility, the combustible gas disposal device being connected to receive combustible gas from the source of combustible gas, as supported by the application as filed, for example paragraphs 14, 47-48, and 75, Fig. 3, and original Claim 25.

New Claim 44 is added to clarify that there is a valve upstream of the generator to receive the continuous flow of gas from the source of combustible gas, and selectively supply the continuous flow of gas to the generator or the combustible gas disposal device, as supported by the application as filed, for example paragraphs 14, 47-48, and 75, Figs. 1 and 3, and original Claim 25.

Various other minor claim amendments are made for clarity and consistency.

Claim Rejections Under 35 U.S.C. § 112

The examiner indicated that:

Claim 24 is rejected under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the Applicant regards as the invention. The claim appears to be written as a "use claim." See MPEP 2173.05(q).

The Applicant respectfully traverses this rejection. Claim 24 has been amended to clarify the use step as a generating electricity and operating blockchain mining devices step. Claim 24 is definite.

The examiner also indicated that:

Claims 1, 3, 7, 9, 13, 14, 18, 20, 21, 24-29, 35, and 40 are rejected under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the Applicant regards as the invention. The Examiner cannot determine the metes and bounds of the claim because the claim has been written in the alternative using an "or" statement. For the purposes of this examination, the Examiner will assume that the claim is a properly written Markush-type limitation: ...one of the group consisting of [A, B, *and* C].

The Applicant respectfully traverses this rejection. The claims recited above have been amended to Markush form, cancelled, or otherwise clarified, and are definite.

Patentability of Claims over Belady in view of Gleifchauf

The examiner indicated that:

Claims 1-3, 8, 10-18, 24-26, 28, 29, 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belady et al. (USPGP 2014/0096837 A1), hereinafter **BELADY**, in view of Gleichauf (USPGP 2018/0109541 A1), hereinafter **GLEIFCHAUF**.

The applicant respectfully traverses this rejection.

Claim 1 as amended recites:

1. A system comprising:
a source of combustible gas produced from a facility selected from a group consisting of a hydrocarbon production, storage, or processing facility;
a generator connected to the source of combustible gas to receive a continuous flow of combustible gas to power the generator; and
blockchain mining devices connected to the generator;
in which:
the blockchain mining devices each have a mining processor and are connected to a network interface;
the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;
the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database;
the network is a peer-to-peer network;
the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network; and
the blockchain database stores transactional information for a digital currency.

Similarly, Claim 24 as amended recites:

24. A method comprising:
producing electricity using a generator and a source of combustible gas produced at a facility selected from the group consisting of a hydrocarbon production well, storage, or processing facility, and operating

blockchain mining devices located at the facility, respectively, using the electricity, in which:

the generator is connected to the source of combustible gas, in which the facility is connected to produce a continuous flow of combustible gas to power the generator;

the blockchain mining devices each have a mining processor and are connected to a network interface;

the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;

the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database;

the network is a peer-to-peer network;

the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network; and

the blockchain database stores transactional information for a digital currency.

Neither Belady or Gleifchauf disclose or teach the above-recited claimed system or method.

Belady appears to disclose a generic gas-powered data center, which is able to accommodate inconsistent gas supply using a shock absorbing method.

Gleifchauf appears to disclose a method of blockchain mining using trusted nodes.

With respect, neither Belady nor Gleifchauf teach or suggest the applicant's claimed system or method. Despite the pre-existence of Belady's gas-powered data center, in many cases before Applicant, combustible gas at a hydrocarbon production, storage, or processing facility was commonly vented, flared, or otherwise wasted (paragraphs 32-34 of Applicant's specification as filed). Often the infrastructure for selling electricity or combustible gas is lacking at a hydrocarbon production, storage, or processing facility (paragraphs 35-36), or the gas is too low quality to use for conventional uses (paragraph 30) - hence why such gas is routinely wasted. The Applicant, however, has discovered that such gas may be used to power blockchain mining devices successfully. Blockchain mining is not synonymous with regular data center processing and cannot be compared as such. By contrast, blockchain mining is known to be energy-intensive (Applicant's paragraph 55 and Gleifchauf paragraphs 4 and 60) - more so than traditional data-processing. The Applicant submits that, prior to Applicant's creation of its claimed system and

method, it was not inherent that such mining activity could be successfully coupled with combustible gas produced at hydrocarbon production, storage, or processing facilities to provide useful and revenue-generating output. However, Applicant has, in making its discovery, provided a mechanism for leveraging the energy in such gas as to provide a source of income, in situations where such gas otherwise might be wasted, for example vented or flared. Applicant's discovery amounts to a new use for previously known individual components (a common precursor for patentability), and may provide numerous benefits including the reduction of greenhouse gas emissions and capture of revenue where gas disposal is otherwise a capital loss (for example paragraphs 33, 34, 48, and 73).

By contrast, neither Belady nor Gleifchauf, whether alone or in combination, teach or suggest applicant's claimed system and method, or the associated advantages. Belady teaches a gas-powered data center, while Gleifchauf teaches a system that carries out difficult and energy-intensive calculations (see para. 4, also Gleifchauf references difficulty, including increasing difficulty over time, numerous times throughout). It would not be obvious at the relevant time for a skilled worker to combine such teachings to yield Applicant's Claim 1 or 24.

Thus, Applicant's Claims 1 and 24, and all claims dependent on such claims, are novel and unobvious over Belady and Gleifchauf in any combination.

CONCLUSION

All pending claims are in condition for allowance. Therefore applicant respectfully requests reconsideration and withdrawal of the objections and rejections, and allowance of the claims, at an early date. Should any issues remain needing resolution prior to allowance, the Examiner is requested to contact applicant's undersigned representative at the telephone number indicated below.

July 4, 2022

Respectfully submitted,

/robertnissen#64256/

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Electronic Acknowledgement Receipt

EFS ID:	46108850
Application Number:	16484728
International Application Number:	
Confirmation Number:	1944
Title of Invention:	BLOCKCHAIN MINE AT OIL OR GAS FACILITY
First Named Inventor/Applicant Name:	Stephen Barbour
Customer Number:	130443
Filer:	Robert Anton Nissen/Matthew Froehlick
Filer Authorized By:	Robert Anton Nissen
Attorney Docket Number:	91A-3US
Receipt Date:	04-JUL-2022
Filing Date:	06-JAN-2020
Time Stamp:	19:00:39
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Foreign Reference	Ref60-WO2013066604A1.pdf	3367914 18f78c711b9bba741676f8227f53f0afe5fe6f8f	no	66

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2	Foreign Reference	Ref61-WO2014130972A1.pdf	3530979 e79f5361ec9e3945613248f4acba5abeea8ee350	no	57
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	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Request for Reconsideration-After Non-Final Rejection	1	1
	Claims	2	9
	Applicant Arguments/Remarks Made in an Amendment	10	16

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16/484,728
Filing Date	2020-01-06
First Named Inventor	BARBOUR, Stephen
Art Unit	3688
Examiner Name	REAGAN, JAMES A
Attorney Docket Number	91A-3US

U.S. PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Attorney Docket Number	91A-3US

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	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

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	Art Unit	3688
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	Attorney Docket Number	91A-3US

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	14	104144183	CN	A	2014-11-12	HITACHI LTD		☒
	15	104969434	CN	A	2015-10-07	GEN COMPRESSION INC		☒
	16	105451504	CN	A	2016-03-30	ALIBABA GROUP HOLDING LTD		☒
	17	105814543	CN	A	2016-07-27	INTEL CORP		☒
	18	106659054	CN	A	2017-05-10	HONGFUJIN PREC IND (SHENZHEN) CO LTD		☒
	19	107257608	CN	A	2017-10-17	HKC CO LTD		☒
	20	110083212	CN	A	2019-08-02	SONY COMPUTER ENTERTAINMENT INC		☒
	21	111522652	CN	A	2020-08-11	INTEL CORP		☒
	22	1656661	CN	A	2005-08-17	ROBERTSHAW CONTROLS CO		☒
	23	738523	DE	C	1943-08-19	BRAUNKOHLE BENZIN AG		☒

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16/484,728
	Filing Date	2020-01-06
	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

	24	2721710	EP	B1	2017-11-01	THE AES CORP		☒
	25	1167861	EP	A1	2002-01-02	TOYOTA MOTOR CO LTD		☐
	26	1490941	EP	A1	2004-12-29	ROBERTSHAW CONTROLS CO		☐
	27	2036189	EP	A2	2009-03-18	EXAFLOP LLC		☐
	28	2074337	EP	A2	2009-07-01	SUN MICROSYSTEMS INC		☐
	29	2354378	EP	A1	2011-08-10	DATAXENTER IP B V		☐
	30	2446516	EP	A2	2012-05-02	SERVER TECH INC		☐
	31	2634956	EP	A2	2013-09-04	BLACKBERRY LTD		☐
	32	3465865	EP	A1	2019-04-10	XSLENT ENERGY TECH LLC		☐
	33	2765100	ES	T3	2020-06-05	FREIGHT FARMS INC		☒
	34	2954670	FR	A1	2011-06-24	ATRIUM DATA		☒

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	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

	35	2954671	FR	A1	2011-06-24	ATRIUM DATA		☒
	36	2957163	FR	A1	2011-09-09	BULL SAS		☒
	37	2960662	FR	A1	2011-12-02	ATRIUM DATA		☒
	38	2999819	FR	A1	2014-06-20	AIRBUS OPERATIONS SAS		☒
	39	2332840	CA	A1	1999-11-25	SURE POWER CORP		☒
	40	2005056196	JP	A	2005-03-03	FANUC LTD		☒
	41	2014518060	JP	A	2014-07-24	Martin Fornage,		☒
	42	2015528266	JP	A	2015-09-24	Kay 2 IP Holdings, LLC		☒
	43	3717420	JP	B2	2005-11-16	SHARP CORP		☒
	44	5662877	JP	B2	2015-02-04	RENESAS ELECTRONICS CORP		☒
	45	100907946	KR	B1	2009-07-16	PUMPKIN NETWORKS KOREA INC		☒

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	Filing Date	2020-01-06
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	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

	46	20090012523	KR	A	2009-02-04	PUMPKIN NETWORKS KOREA INC		☒
	47	20180084285	KR	A	2018-07-25	HYUNDAI MOTOR CO LTD		☒
	48	2004277	NL	C2	2011-08-23	DATAXENTER IP B V		☐
	49	2793537	CA	A1	2011-04-13	ET INTERNATIONAL		☒
	50	2642422	RU	C2	2018-01-25	TE AES KORPOREJSHN		☒
	51	2015199629	WO	A1	2015-12-30	DOKUZ EYLUEL UENIVERSITESI REKTOERLUEGUE		☒
	52	201214093	TW	A	2012-04-01	HON HAI PREC IND CO LTD		☒
	53	02/07365	WO	A2	2002-01-24	NXEGEN		☐
	54	2006/058341	WO	A2	2006-06-01	SANMINA SCI CORP		☐
	55	2008/039773	WO	A2	2008-04-03	RACKABLE SYSTEMS INC		☐
	56	2011/130406	WO	A1	2011-10-20	INT INC		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

	57	2012/177769	WO	A1	2012-12-27	PLEXXI INC		☐
	58	2013/022501	WO	A1	2013-02-14	STI GROUP		☐
	59	2013/066602	WO	A1	2013-05-10	PLEXXI INC		☐
	60	2013/066604	WO	A1	2013-05-10	PLEXXI INC		☐
	61	2014/130972	WO	A1	2014-08-28	UNIV FLORIDA		☐
	62	2014/185311	WO	A1	2014-11-20	SONY COMPUTER ENTERTAINMENT INC		☒
	63	2015/175693	WO	A1	2015-11-19	GREEN REVOLUTION COOLING INC		☐
	64	2016/106373	WO	A1	2016-06-30	BOSCH GMBH ROBERT		☐
	65	2016/145052	WO	A1	2016-09-15	VAPOR IO INC		☐
	66	2017/074513	WO	A1	2017-05-04	VAPOR IO INC		☐
	67	2017/214210	WO	A1	2017-12-14	XET		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16/484,728
	Filing Date	2020-01-06
	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16/484,728
	Filing Date	2020-01-06
	First Named Inventor	BARBOUR, Stephen
	Art Unit	3688
	Examiner Name	REAGAN, JAMES A
	Attorney Docket Number	91A-3US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/RobertNissen#64256/	Date (YYYY-MM-DD)	2022-07-04
Name/Print	Robert A. Nissen	Registration Number	64256

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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Electronic Acknowledgement Receipt	
EFS ID:	46108796
Application Number:	16484728
International Application Number:	
Confirmation Number:	1944
Title of Invention:	BLOCKCHAIN MINE AT OIL OR GAS FACILITY
First Named Inventor/Applicant Name:	Stephen Barbour
Customer Number:	130443
Filer:	Robert Anton Nissen/Matthew Froehlick
Filer Authorized By:	Robert Anton Nissen
Attorney Docket Number:	91A-3US
Receipt Date:	04-JUL-2022
Filing Date:	06-JAN-2020
Time Stamp:	18:49:36
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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		Total Files Size (in bytes):	113448763		

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<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/484,728	Filing Date 01/06/2020	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	07/04/2022	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 41	Minus	** 41	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/BURNELL L ROSS/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/484,728	01/06/2020	Stephen Barbour	91A-3US	1944

130443 7590 06/17/2022

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CANADA

EXAMINER	
REAGAN, JAMES A	

ART UNIT	PAPER NUMBER
3688	

MAIL DATE	DELIVERY MODE
06/17/2022	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Applicant-Initiated Interview Summary	**Application No.** 16/484,728	**Applicant(s)** Barbour, Stephen		
	Examiner JAMES A REAGAN	**Art Unit** 3688	**AIA (First Inventor to File) Status** Yes	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
JAMES A REAGAN	Primary Examiner	Telephonic
Robbie Nissen	Attorney of Record	

Date of Interview: 15 June 2022

Issues Discussed:

Proposed Amendment(s)

Discussed the proposed amendments. The Examiner has reviewed the prior art of record as well as the IDS submitted 06/03/2022. The made suggestions regarding claim construction. Applicant's representative will file a formal response and an updated search and evaluation will be conducted at that time. No agreements were reached.

☑ Attachment

/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Agenda summary:

1. Discuss potential amendment to claim 24.
2. Discuss support and advantages.
3. Discuss the prior art.

Potential claim 24 amendment:

24. (Currently amended) A method comprising:

using a source of combustible gas produced at a hydrocarbon production well, storage, or processing facility, to produce electricity to operate a blockchain mining device located at the hydrocarbon production well, storage, or processing facility, respectively; and

prior to using the source of combustible gas:

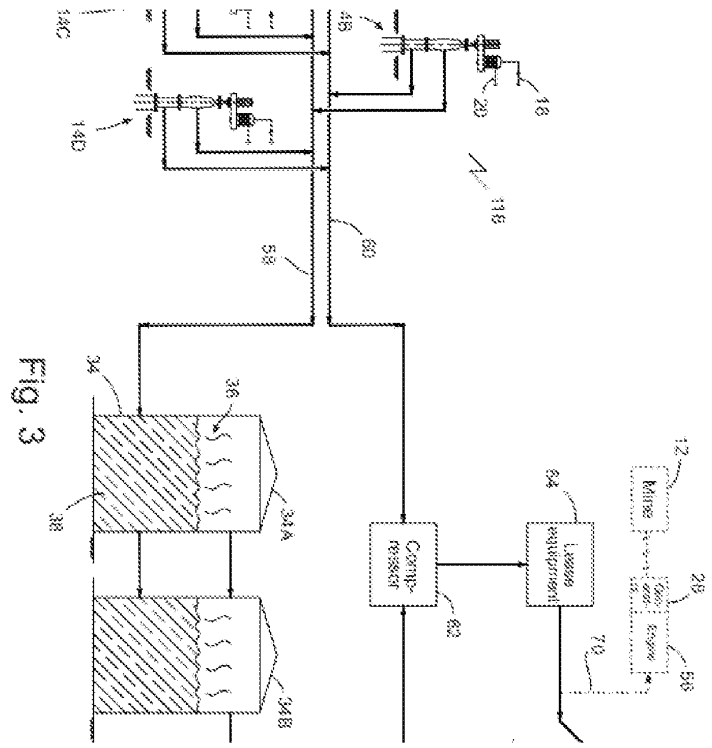
disconnecting or diverting the source of combustible gas from a combustible gas disposal device at the hydrocarbon production well, storage, or processing facility; and

connecting the source of combustible gas to operate the blockchain mining device;

in which the combustible gas disposal comprises one or more of a flare, a vent to the atmosphere, an incinerator, or a burner.

Application excerpts:

Fig. 3:



Para. 47:

Referring to Fig. 3, the source of combustible gas may be an oil storage or processing unit, for example a production storage tank or tanks 34A-B. The tanks 34 may store emulsion, for example a mixture of oil and water, which may be supplied via one or more emulsion or oil lines 58 from wells 14A-D. The source of natural gas may comprise oil storage production tank 34 connected to receive oil produced from the remote oil well 14. Oil storage production tank 34 may store, and in some cases separate, emulsion 38, which may release vapor such as combustible gas 36 over time. A gas outlet, such as a vapor recovery unit 66, may be connected to supply natural gas from the oil storage production tank 34 to the engine 56. A compressor 62 or other suitable device may be used to pressurize the gas supplied to engine 56. The engine 56 and generator 28 may form a standalone unit or may be connected for other functions on the site, such as to pump a well or power communications or electrical equipment. Pressurized natural gas from compressor 62 may be used to fuel lease equipment 64, such as control equipment, communications equipment, surveillance equipment, heaters, or other components. Excess or unused gas may be directed to a gas disposal or storage device such as an atmospheric vent or combustion device, in this case a flare 68. Gas may be diverted from flare 68 to engine 56 via an excess gas line 70.

Para. 48:

[0048] Referring to Fig. 3, in some cases a method of installing the system 10 on site includes reducing the amount of combustible gas that is wasted on site. For example, the method of install may include disconnecting the source of combustible gas, in this case from tanks 34 and/or line 60, from an atmospheric vent or combustion device, in this case flare 68, or to atmosphere via a vent 52 (Fig. 1). The source of combustible gas may be initially connected to operate the blockchain mining device 12. Once disconnected, the atmospheric vent or combustion device may be unused in the future, or may be used only in certain circumstances. In some cases combustible gas is diverted at least partially from the atmospheric vent or combustion device to operate the blockchain mining device 12, so that relatively less gas is wasted during operation. In such cases the flare 68 may remain connected to the source of gas, for example to receive a lesser feed of gas than prior to the installation of mining device 12, and in other cases to receive diverted excess gas in certain circumstances for example as described further elsewhere in this document. An atmospheric vent or combustion device is an example of a gas disposal device, and includes a flare, a vent to the atmosphere, an incinerator, a burner, and other suitable devices.

Para. 74:

Referring to Fig. 1, while the power load level is set to the daily minimum, the excess gas or electricity may be addressed in a suitable fashion. In the example shown, excess electricity produced by the generator 28 is diverted to an electricity disposal device, in this case a load bank 32 when the production rate is above the daily minimum production rate 155B. In some cases the controller 86 or another suitable device, may divert excess gas from reaching engine 24, for example to a suitable gas disposal or storage device, such as an atmospheric vent, a flare, or other device. One or more valves, such as an instrumented valve, may be used for such diversion. In some cases excess gas sent to the engine will automatically divert to disposal through the gas tree, as such equipment may already have pressure regulation installed and set such that above a certain pressure excess gas is diverted to vent or flare. The load bank may be controlled to load up the engine so that all power generated in excess of the required amount to power the mine can be dissipated in the load bank as heat. In such a fashion the user can eliminate venting altogether as long as the engine is sized to consume the maximum available gas supply.

Para. 32:

A source of natural gas may be located at a remote oil and gas site, for example one that is lacking in accessible infrastructure such as an external pipeline network (sales line) or external power grid to sell into. In many locations it may not be economically feasible to build the infrastructure required to take the produced gas, or resultant electricity generated by combustion of the gas, to market, for example due to significant capital expense required or when the volume of gas is insufficient to pay out the investment. In such cases, the operator is forced to do something with the excess or stranded gas and is left with few options. Such options currently include venting the gas to atmosphere un-combusted, combusting the gas on site via flare, incinerator, or combustor, or worst case scenario ceasing production of the gas source, for example shutting in the oil well.

Para. 33:

excess gas to atmosphere is the most cost effective option for the operator but may have the most negative impact on the environment, as excess natural gas is regarded as 25-35 times worse than CO_2 as a greenhouse gas on a 100 year global warming potential timescale. Currently, venting

gas to atmosphere is a common occurrence in oil production all over the world, as few jurisdictions restrict this practice.

Para. 34:

Combustion disposal options, while more environmentally friendly than venting, represent a significant capital expense and do not provide utility for the operator. Combustion options include, but are not limited to, flaring and incineration. Combustion disposal methods produce waste heat and essentially represent waste of the potential energy of the gas. Such options may represent a capital liability to the operator, as such do not generate any revenue. Both combustion and venting can pose health concerns to nearby residents and are typically considered a nuisance.

Para. 30:

The end user of natural gas needs to be assured of two conditions before committing to the use of gas in a home or factory: the gas must be of consistent quality, meeting sales gas specifications, and the supply of gas must be available at all times at the contracted rate. Gas treating facilities, therefore, must be designed to convert a particular raw gas mixture into a sales gas that meets the sales-gas specifications, and such facilities must operate without interruption. Typical processing steps include inlet separation, compression, gas sweetening, sulfur recovery or acid gas disposal, dehydration, hydrocarbon dewpoint control, fractionation and liquefied petroleum gas (LPG) recovery, and condensate stabilization. Sales gas specifications may vary by jurisdiction, although Table 1 below illustrates a typical specification. A sales gas line may be a pipeline of more than ten km of length, in some cases more than fifty, a hundred, or two hundred, kilometers in length, and connecting between an oil and gas site and travelling to an end user, a processing site, or a distribution site.

Para. 35:

Selling excess gas to a pipeline, i.e. a sales gas line, or using the gas to generate electricity to sell to an external power grid may be ideal options, but such options may require a significant capital expense when there is no infrastructure nearby. To pay off the capital expense, the volume of excess gas must be significant and the supply must also be guaranteed for the payout period. This is often not the case in many upstream oil production activities, as gas volumes associated with oil production can quickly diminish. Many remote oil and gas sites are located in unpopulated areas that are hundreds of kilometers outside of the nearest town, and of which no viable sales option is economically feasible.

Para. 36:

An external power grid may be an electrical power transmission system comprising overhead or underground wiring, often supplying electricity in polyphase form, and spanning an electrical substation to an oil and gas site. Long-distance electricity transmission is typically carried with high voltage conductors. Transmission lines traverse large regions and require numerous support towers, often spanning hundreds of kilometers from generation to distribution and end use. Substations transform power from transmission voltages to distribution voltages, typically ranging from 2400 volts to 37,500 volts.

Para. 55:

> Mining is the process of adding transaction records to BITCOIN (TM)'s public ledger of past transactions. This ledger of past transactions is called the blockchain as it is a chain of blocks. The blockchain serves to confirm transactions to the rest of the network as having taken place. BITCOIN (TM) nodes use the blockchain to distinguish legitimate BITCOIN (TM) transactions from attempts to re-spend coins that have already been spent elsewhere. Mining may be intentionally designed to be resource-intensive and difficult so that the number of blocks found each day by miners remains steady. Individual blocks may be required to contain a proof-of-work to be considered valid. This proof-of-work is verified by other BITCOIN (TM) nodes each time they receive a block. BITCOIN (TM) uses the hashcash proof-of-work function.

Gleichauf excerpts:

Para. 4:

> In this high - intensity computing environment with ever - more - difficult blockchain puzzles, a likelihood of a miner without highly specialized hashing hardware capable of more effectively and / or efficiently finding a solution to a blockchain puzzle is rather small. As such, blockchain's incentive system encourages miners to adopt more efficient technology and, thereby, at least keep up with escalating difficulty of mining each new generation of blocks, and indirectly to jostle to monopolize potential earnings through utilizing continuously improved mining technology. Today, to make mining profitable or sustainable, miners may utilize application - specific integrated circuits (ASICs) with a significant hashing power, such as in relation to graphic processing units (GPUs), field programmable gate arrays (FGPA), etc. used in the past. As such, mining has become a business with significant capital costs (e.g., for an ASIC accelerated hash computation system, a place to house it, network connections, etc.) as well as operating costs (electricity, monitoring personnel, etc.), meaning that ASIC miners geographically clustered near cheaper electrical power and / or cooler climates (e.g., for ASIC heat dissipation, etc.), for example, may gain an unfair advantage over other miners on a network. As a result, blockchain mining has become increasingly concentrated in particular geographic areas, such as in cooler (e.g., mountainous, etc.) places with readily accessible (e.g., unregulated, etc.) and / or cheaper hydro power, for example.

Para. 60:

> In at least one implementation, a reward and/or fee may, for example, depend and/or be based, at least in part, on an individual contribution to a block validation of at least some of the plurality of nodes, a shared contribution to a block validation of at least some of the plurality of nodes, or any combination thereof. For example, in some instances, a reward and/or fee may be allocated to a miner that individually contributed to solving a particular blockchain puzzle due, at least in part, to its more effective and/or more efficient mining hardware, such as a built-in cryptographic hash accelerator. At times, however, such as to ensure fairness to miners with less effective and/or less efficient (e.g., older, etc.) hardware, an MSP or any other suitable party may, for example, coordinate mining activity of a plurality of miners via splitting a work of searching for a blockchain solution and rewarding these miners according to their shared contribution. For example, here, if a particular mining node of these plurality of nodes finds a valid proof of work for a block, an MSP (or some other party) may allocate a reward and/or fee in proportion to a number of hashing operations or some other effort (e.g., availability of a miner during a billing cycle, etc.) the plurality of nodes contributed to solving the block. Again, these are merely examples relating to an individual and/or shared contribution, and claimed subject matter is not so limited. Any other suitable types of contributions to a shared mining effort may, for example, be used herein, in whole or in part, or otherwise considered. Shared contributions may also be verified via, for example, a consensus approach, network-wide or otherwise, and may be recorded in a sidechain, such as for purposes of billing, tracking, or the like.

Belady excerpts:

Para. 1:

> The throughput of communications between multiple computing devices continues to increase. Modern networking hardware enables physically separate computing devices to communicate with one another orders of magnitude faster than was possible with prior generations of networking hardware. Furthermore, high-speed network communication capabilities are being made available to a greater number of people, both in the locations where people work, and in their homes. As a result, an increasing amount of data and services can be meaningfully provided via such network communications. As a result, the utility of computing devices increasingly lies in their ability to communicate with one another. For example, users of computing devices traditionally used to utilize computing devices for content creation, such as the creation of textual documents or graphical images. Increasingly, however, the most popular utilizations of computing devices are in the browsing of information sourced from other computing devices, the interaction with other users of other computing devices, the utilization of the processing capabilities of other computing devices and the like.

Para. 2:

> In particular, it has become more practical to perform digital data processing at a location remote from the location where such data is initially generated, and where the processed data will be consumed. For example, a user can upload a digital photograph to a server and then cause the server to process the digital photograph, changing its colors and applying other visual edits to it. In such an example, the digital processing, such as of the photograph, is being performed by a device that is remote from the user. Indeed, in such an example, if the user was utilizing a battery-operated computing device to interact with the server such as, for example, a laptop or smartphone, the user could be in a location that was not receiving any electrical power at all. Instead, electrical power can have been delivered to the server, which is remote from the user, and the server can have utilized electrical power to process the data provided by the user and then return the processed data to the user.

Para. 4:

> However, data centers often consume large quantities of electrical power, especially by the computing devices themselves. Increasingly, the cost of obtaining such electrical power is becoming a primary determinant in the economic success of a data center. Consequently, data centers are being located in areas where the data centers can obtain electrical power in a cost-effective manner. In some instances, data centers are being located in areas that can provide inexpensive electrical power directly, such as areas in which electricity can be purchased from electrical utilities or governmental electrical facilities inexpensively. In other instances, however, data centers are being located in areas where natural resources, from which electrical power can be derived, are abundant and can be obtained inexpensively. For example, natural gas is a byproduct of oil drilling operations and is often considered a waste byproduct since it cannot be economically captured and brought to market. Consequently, in areas where oil drilling operations are being conducted, natural gas is often available for free, or at a minimal cost. As will be recognized by those skilled in the art, natural gas can be utilized to generate electrical power, such as, for example, through a fuel cell or by generating steam to drive a steam powered electrical generator. As another example, municipal landfills and other like waste treatment and processing centers can produce a gas commonly referred to as “biogas” which can, likewise, be utilized to generate electrical power that can, then, be consumed by the computing devices of a data center. Unfortunately, gas that is available at reduced cost cannot always be provided at a well-maintained pressure. Instead, the pressure at which such gases are provided can often vary

substantially, including both positive and negative gas pressure spikes where the pressure of the provided gas increases, or decreases, respectively. Not only can such gas pressure spikes damage equipment that utilizes such gas, but they can also be disruptive to the entire gas supply network.

Para. 28:

Although not part of a gas supply shock absorber, the system 100 of FIG. 1 also illustrates an optional gas quality sensor 131 that can be communicationally coupled to a gas diverter valve 133 via the communicational connection 132. As indicated previously, in one embodiment, the gas supply 110 can be from non-regulated gas sources, such as the gas produced from a landfill, or gas produced as a waste product of oil drilling. As will be recognized by those skilled in the art, such gas can contain impurities that can damage various gas-consuming equipment such as, for example, the gas-to-electricity converter 180. For example, such gas can comprise too much sulfur, carbon dioxide, siloxanes, or other like impurities. Thus, in one embodiment, a gas quality sensor 131 can be positioned to monitor the quality of the gas received from the gas supply 110. Should the gas quality sensor 131 detect that the quality of gas being provided is no longer acceptable, the gas diverter valve 133 can be triggered and the gas provided by the gas supply 110 can be vented as vented gas 111. The gas quality sensor 131 and the gas diverter valve 133 can be spaced sufficiently apart such that the gas diverter valve 133 can trigger prior to the arrival of the gas, down the piping 120, that was deemed to be of insufficient quality by the gas quality sensor 131 as such gas passed its detection.

Para. 29:

While the system 100 of FIG. 1 is shown as comprising a data center 190, the above-described gas supply shock absorber does not require any such data center 190 and can operate equally well with any gas-consuming entity. Nevertheless, in one embodiment, an advantage of a gas consuming entity, such as the data center 190 in combination with a gas-to-electricity converter 180 that provides electrical power 181 to the data center 190, can be that such an entity can dynamically vary the amount of gas consumed in response to variations in the system 100. For example, the data center 190 can comprise a communicational connection 191 to a network 199, as illustrated in the system 100 of FIG. 1, through which the data center 190 can communicate with other data centers, including remotely located data centers, which also comprise their own communicational connections to the network 199. Such a communicational connection 191 to the network 199 can enable the data center 190 to request additional processing work from other data centers, thereby increasing its consumption of the electrical power 181, in turn increasing the amount of gas consumed by the gas-to-electricity converter 180. Similarly, the communicational connection 191 to the network 199 can enable the data center 190 to offload processing work to the other data centers, thereby decreasing its consumption of electrical power 181, in turn decreasing the amount of gas consumed by the gas-to-electricity converter 180.

Para. 38:

The steps of the flow diagram 200 of FIG. 2 can be performed by one or more of the computing devices of the data center, or can be performed by one or more computing devices that are remote from the data center. Turning to FIG. 3, an exemplary general-purpose computing device, such as one of the one or more computing devices that can perform the steps of the flow diagram of FIG. 2, is illustrated in the form of the exemplary general-purpose computing device 300. The exemplary general-purpose computing device 300 can include, but is not limited to, one or more central processing units (CPUs) 320, a system memory 330 and a system bus 321 that couples various system components including the system memory to the processing unit 320. The system bus 321 may be any of several types of bus structures including a memory bus or memory controller, a peripheral bus, and a local bus using any of a variety of bus architectures. Depending

on the specific physical implementation, one or more of the CPUs 320, the system memory 330 and other components of the general-purpose computing device 300 can be physically co-located, such as on a single chip. In such a case, some or all of the system bus 321 can be nothing more than communicational pathways within a single chip structure and its illustration in FIG. 3 can be nothing more than notational convenience for the purpose of illustration.

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16484728
Filing Date	2018-02-06
First Named Inventor	Stephen Barbour
Art Unit	
Examiner Name	
Attorney Docket Number	91A-3US

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20160330031		2016-11-10	Drego et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	2016067295	WO		2016-05-06	Spondoolies Tech LTD.		☐

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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16484728
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	Examiner Name	
	Attorney Docket Number	91A-3US

	1	THESELFGOVERNED, Electricity Consumption: Bitcoin mining vs The current global financial system, Reddit, posted June 5, 2014, 15 pages.	☐
	2	MIA BENNETT, Blog - Bitcoin mining: The next rush to hit the Arctic?, posted February 6, 2018, 14 pages.	☐
	3	PYMNTS, China Moves To Squeeze Out Bitcoin Mining, posted January 10, 2018, 7 pages.	☐
	4	Cryptocurrency investors eye provinces with low electricity rates, The Fraser Institute Blog, posted January 31, 2018, 3 pages.	☐
	5	JCHI2210, Free natural gas, is it worth it to use a Natural gas generator?, Bitcoin Forum, posted August 27, 2017, 7 pages.	☐
	6	AMANDA STEPHENSON, Genalta Power earns carbon offsets for turning flare gas into electricity, Calgary Herald, posted September 30, 2014, 6 pages.	☐
	7	KENYN, Saving the environment through bitcoin; one transaction equals 117 recycled bottles, Reddit, posted February 26, 2017, 17 pages.	☐
	8	KINOLVA, Shower Thought: Mining Bitcoin for Heat / Hot Water?, Reddit, posted January 28, 2017, 14 pages.	☐
	9	The Best Places in The World to Mine Bitcoin, PRNewswire, posted January 18, 2018, 8 pages.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16484728
	Filing Date	2018-02-06
	First Named Inventor	Stephen Barbour
	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

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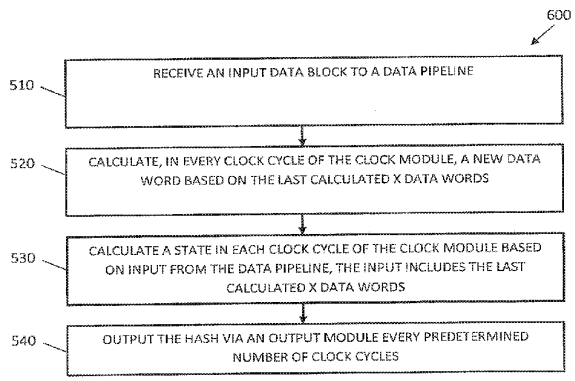

Figure 11

(57) Abstract: A method and engine for hash calculation, the method comprising receiving data blocks via an input module, providing clock cycles by a clock module, calculating a hash from a received data block by a process module including a data pipeline and a state pipeline, the hash calculation comprising: an input data block to the data pipeline, the data block includes a sequence of data words including X data words, wherein X is a known number, calculating, in every other clock cycle of the clock module, an new data word based on the last calculated X data words, and performing a stage of the state pipeline in each clock cycle of the clock module, in which a state is calculated based on input from the data pipeline, the input includes the last calculated X data words, and outputting the hash via an output module every predetermined number of clock cycles.

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METHOD AND SYSTEM FOR REDUCING POWER CONSUMPTION IN BITCOIN MINING VIA WATERFALL STRUCTURE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of US provisional patent application No. 62/072,466, filed on October 30, 2014 which is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to implementing bitcoin block chain signing, and more particularly, to implementing same in an efficient engine micro architecture which uses data processing technique to support reduced power consumption.

BACKGROUND OF THE INVENTION

[0003] The most important part of the bitcoin system is a public ledger that records financial transactions in bitcoins. This is accomplished without the intermediation of any single, central authority, as long as mining is decentralized. Instead, multiple intermediaries exist in the form of computer servers running bitcoin software. By connecting over the Internet, these servers form a network that anyone can join. Transactions of the form: "payer X wants to send Y bitcoins to payee Z" are broadcasted to this network using readily available software applications. Bitcoin servers can validate these transactions, add them to their copy of the ledger, and then broadcast these ledger additions to other servers.

[0004] Bitcoin transactions are permanently recorded in a public distributed ledger called the block chain. Approximately six times per hour, a group of accepted transactions, a block, is added to the block chain, which is quickly published to all network nodes. This allows bitcoin software to determine when a particular bitcoin amount has been spent, a novel solution for preventing double-spends in a peer-to-peer environment with no central authority. Whereas a conventional ledger records the transfers of actual bills or promissory notes that exist apart from it, the block chain is the only place that bitcoins can be said to exist. To independently verify the chain-of-ownership of any and every bitcoin amount, full-featured bitcoin software stores its own copy of the block chain.

[0005] Maintaining the block chain is referred to as "mining" and those who do that are rewarded with newly created bitcoins and transaction fees. Miners may be located anywhere

in the world; they process payments by verifying each transaction as valid and adding it to the block chain. Today, payment processing is rewarded with 25 newly created bitcoins per block added to the block chain. To claim the reward, a special transaction called a coinbase is included with the processed payments. All bitcoins in circulation can be traced back to such coinbase transactions. The bitcoin protocol specifies that the reward for adding a block will be halved approximately every four years. Eventually, the reward will be removed entirely when an arbitrary limit of 21 million bitcoins is reached circa 2140, and transaction processing will then be rewarded by transaction fees solely.

[0006] Recently, mining has become very competitive, and ever more specialized technology is utilized. The most efficient mining hardware makes use of custom designed application-specific integrated circuits (ASIC), which outperform general purpose CPUs and use less power as well. Without access to these purpose built machines, a bitcoin miner is unlikely to earn enough to even cover the cost of the electricity used in his or her efforts.

[0007] Bitcoin chain block consists of transactions that need to be executed that are preceded by header. All the transactions are signed using a Merkle Tree implementation and the signature is embedded in the block header, the block header also needs to be signed by double hash that meets certain conditions in order to become a valid signature that is accepted by the network.

[0008] A Merkle tree is a binary tree that is used in bitcoin to summarize all the transactions in a block, producing an overall digital fingerprint of the entire set of transactions. A Merkle tree is constructed by recursively hashing pairs of nodes until there is only one hash, called the *root*, or *Merkle root*.

[0009] A bitcoin block chain holds the actual transactions and is signed by signing the transactions and the header. The header is the heart of all the bitcoin mining mechanism and is used in order to secure the bitcoin by design as well as driving bitcoin mining efforts.

[0010] The mining algorithm for Bitcoins is done by signing the header of each message. Every miner gets a header to sign from a pool which distributes headers to a group of miners. The miner needs to perform the following Hash function in order to find a signature of the header as shown in Equation 1 below:

$$Signature = SHA\text{-}256(SHA\text{-}256(Block\_Header))$$

Eq. (1)

[0011] The function SHA256 produces a hash with 256 bits. After finding the signature, the miner can know if the header is a valid header and can be sent to the network as a successful transaction. There are very rare cases where the header is valid.

[0012] A header is valid only when the signature is smaller than the Target (Bits) in the header. The target is a 256-bit number (extremely large) that all Bitcoin clients share. The SHA-256 hash of a block's header must be lower than or equal to the current target for the block to be accepted by the network. The lower the target, the more difficult it is to generate a block.

[0013] The header includes the following fields: version, previous block hash, Merkle root, timestamp, bits and nonce. SHA-256 is calculated over chunks of 512 bits. The block header can be divided to two chunks adding a padding field of 384b. The first chunk (Chunk 1) includes the version, the previous block hash and a main portion (for example, 224 bits out of 256 bits) of the Merkle root hash. The second chunk (Chunk 2) may include a marginal portion of the Merkle root hash (for example, 32 bits), the timestamp, bits, nonce and the padding field. The version and the padding sections are constant. The previous block hash, the timestamp and the bits sections are changed for each new block header. The Merkle root hash can be changed by the miner within a given header by influencing the Merkle root and the nonce is the dynamic portion which is scanned by the miner in order to look for the signature.

[0014] In order to find the header structure that will create a valid signature (less than the target), the miner is allowed to change the 32b nonce value. The miner can increment the nonce value for every trial and check for a signature, in order to cover all options a 2^32 trials are needed, which may lead to no resolution and then a new header format should be attempted. (a new header format is created by using a different Merkle root that is extracted from the list of transactions in the message).

[0015] In order to focus on the hash algorithm and optimization for the nonce scanning (2^32 iterations), we will just assume that the miner has an option to change the Merkle root and start a new round of nonce scanning using a new header structure and look for a valid signature again.

[0016] As mentioned above, the signature is calculated by applying SHA-256(SHA-256(Header)). The first chunk is hashed first, providing the mid-state hash (H0). H0 is the

initial vector (IV) that is used to load the initial state of the SHA of the second chunk which produces that intermediate result of the SHA(Header), This then goes to another SHA function that produces the signature. Therefore, the process involves three SHA iterations (each SHA iteration takes approximately 64 cycles). The mid-state H0 is calculated once per header, usually by the host computer. The next two hashes are the performance calculations and may be carried out by hardware acceleration.

[0017] As described above the transactions are signed using a Merkle root hash. The Merkle root can be manipulated by adding a coinbase transaction to the network transactions. As mentioned above, a coinbase transaction belongs to the miner and can be used to get the mining fees.

[0018] Power efficiency of the aforementioned double hash architecture plays a critical factor in the engine implementation. In known engine implementations, the engine toggles every clock and the power consumption is split between the logic and the flop flops more or less evenly. The flip flop power is dictated by the shift between stages of the engine. In the known implementations, the shift between stages happens every clock cycle and is a significant contributor to the overall power consumption, as well as the repeating data processing.

SUMMARY OF THE INVENTION

[0019] Embodiments of the present invention may provide a method and system for reducing power consumption in bitcoin mining via waterfall structure, the system may include a hash engine, including an input module for receiving data blocks, a memory, a clock module to provide clock cycles, a process module including a data pipeline and a state pipeline for calculating a hash from a received data block, and an output module to output the hash every predetermined number of clock cycles.

[0020] The process module according to some embodiments of the present invention may be configured to receive an input data block to the data pipeline, the data block includes a sequence of data words including X data words, wherein X is a known number, calculate, in every clock cycle of the clock module, a new data word based on the last calculated X data words, and perform a stage of the state pipeline in each clock cycle of the clock module, in which a state is calculated based on input from the data pipeline, the input includes the last calculated X data words. In some embodiments of the present invention, X is equal 16, and wherein each data word is of 32 bits.

[0021] In some embodiments of the present invention, the calculated state includes a sequence of eight state words, wherein the process module is further configured to calculate, in each clock cycle, a first and fifth new state words of the sequence, in order to form a new state of sequenced eight words based of the previous state's words.

[0022] In some embodiments of the present invention, after X clock cycles, a new input data block is inserted instead of the first X data words of the previously inserted input data block.

[0023] In some embodiments of the present invention, the engine has an array arrangement, the array has X columns to which input data blocks can be inserted, wherein the engine is configured to receive a new input data blocks to another of the X columns on every clock cycle, once the first X data words in the column become irrelevant. In some embodiments of the present invention, each column may include up to four different input data blocks in process. In some embodiments of the present invention, the engine is further configured to provide to a row in said array arrangement, in each clock cycle, multiplexed values from previous rows, to demultiplex the multiplexed values in order to create a new data word in a selected column, and to generate multiplexed word values by multiplexing data words of the row, for generating new words in following rows.

[0024] In some embodiments of the present invention, the engine has an array arrangement in the state pipeline, the array has four columns, to which state sequences can be inserted, each state sequence is represented by four couples of a first and a fifth words, wherein the engine is further configured to receive a new state sequence to another of the four columns on every clock cycle, once the first four couples in the column become irrelevant. The engine may be further configured to provide to a row in said array arrangement, in each clock cycle, multiplexed values from previous rows, to demultiplex the multiplexed values in order to create a new state word in a selected column, and to generate multiplexed word values by multiplexing state words of the row, for generating new words in following rows.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] For a better understanding of embodiments of the invention and to show how the same may be carried into effect, reference will now be made, purely by way of example, to the accompanying drawings in which like numerals designate corresponding elements or sections throughout.

[0026] In the accompanying drawings:

[0027] Figure 1 is a schematic illustration of a SHA-256 hash engine according to embodiments of the present invention;

[0028] Figure 2 is a schematic illustration of a state-of-the-art process for signature calculation, also called herein "the regular implementation";

[0029] Figure 3 is a schematic illustration of a logic circuit diagram representing the logic function that is implemented in order to create an induced data block according to embodiments of the present invention;

[0030] Figure 4 is a schematic illustration of a logic circuit diagram representing the arithmetic logic that is used for calculating the first and fifth state words of the next state in the state pipeline.

[0031] Figure 5 is a schematic diagram illustrating one job being processed in the data (W) section in a simple W waterfall implementation, herein referred to as a W waterfall, according to some embodiments of the present invention.

[0032] Figure 6 is a schematic illustration of a W waterfall array, which allows a new job entry, i.e. new data input, on every cycle, rather than new data every 16 cycles when using one column, according to some embodiments of the present invention.

[0033] Figure 7 is a schematic illustration of an optimized W waterfall array, according to some embodiments of the present invention.

[0034] Figure 8 is a schematic illustration of a simple state waterfall implementation in the state section, representing one job being processed in the state section, according to some embodiments of the present invention.

[0035] Figure 9 is a schematic illustration of an exemplary optimized state waterfall array, according to some embodiments of the present invention.

[0036] Figure 10 is a schematic illustration of the waterfall implementations in the data (W) and state sections, according to some embodiments of the present invention; and

[0037] Figure 11 is a schematic flowchart illustrating a method for hash calculation according to some embodiments of the present invention.

[0038] The drawings together with the following detailed description make apparent to those skilled in the art how the invention may be embodied in practice.

DETAILED DESCRIPTION OF THE INVENTION

[0039] With specific reference now to the drawings in detail, it is stressed that the particulars shown are by way of example and for purposes of illustrative discussion of the preferred embodiments of the present invention only, and are presented in the cause of providing what is believed to be the most useful and readily understood description of the principles and conceptual aspects of the invention. In this regard, no attempt is made to show structural details of the invention in more detail than is necessary for a fundamental understanding of the invention, the description taken with the drawings making apparent to those skilled in the art how the several forms of the invention may be embodied in practice.

[0040] Before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of the components set forth in the following description or illustrated in the drawings. The invention is applicable to other embodiments or of being practiced or carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein is for the purpose of description and should not be regarded as limiting.

[0041] Reference is now made to **Figure 1**, which is a schematic illustration of a SHA-256 hash engine 10 in accordance with embodiments of the present invention. Engine 10 includes an input module 50, a process module 52, memory 54, a clock module 56 and an output module 58. As mentioned above, a SHA-256 hash function is used for the signature calculation. In the SHA-256 process, input data block 100 is provided (see more detailed description with reference to Figures 2-5) via input module 50. Input data block 100 may be stored in memory 54. Process module 52 may then perform on input data block 100 a SHA-256 hash logic function, which includes an algorithm of 64 repetitive stages, and which produces a signature. The outcome signature may be outputted via output module 58 and/or stored in memory 54. The SHE-256 hash function is performed by a clocked engine, wherein a stage of hash engine 10 is performed in each clock cycle provided by clock module 56.

[0042] Reference is now made to **Figure 2**, which is a schematic illustration of a state-of-the-art process 20 for signature calculation, also called herein "the regular implementation". As mentioned above, a SHA-256 hash function is used for the signature calculation. In the SHA-256 process, input data block 100 is provided, and by a repetitive algorithm of 64 stages that

are performed based on input data block 100, a signature 263 is produced. The engine is constructed of a state section/pipeline 22 and a data ("W") section/pipeline 24.

[0043] Input data block 100 induces data blocks 101-163, each induced according to a logic algorithm (described in detail with reference to Figure 3) based on the previous data block. Input data block 100 and each of the induced data blocks 101-163 are 512 bits data blocks, each includes 16 words ("W"s 0-15) of 32 bits. The logic of W pipeline 24 generates an induced data block every stage, by generating a new W15 by a function of words W0, W1, W9 and W14 of the previous data block. That is, W15[i+1] = f (W0[i], W1[i], W9[i], W14[i]). The rest of the words of the induced data block are produced by shifting W1-W15 of the previous block to W0-W14 of the induced block, respectively. Accordingly:

W0[i+1] = W1[i]

W1[i+1] = W2[i]

.

.

.

W14[i+1] = W15[i]

[0044] Input data block 100 is provided to W pipeline 24, which feeds state pipeline 22 with W0 of input data block 100. A first state 200 is produced based on W0 of input data block 100. Each of the following states 201-263 is produced in the respective stage based on the previous state and on the first word, i.e. W0, of the respective induced data block of the respective stage. For example, a state [i] is produced in stage [i] based on state [i-1] and on W0[i] of data block [i]. Stage [i] gets W0 from data block [i], and the following stage [i+1] get W0[i+1] from data block [i+1].

[0045] As described in detail herein, embodiments of the present invention enables loading, in each clock cycle, i.e. in each stage, of a new 32 bit word only, rather than copying 16 such words in each cycle. Therefore, the overall power consumption of the Bitcoin mining engine is reduced. Such implementation is called herein "the waterfall implementation", and it may be applied to the W section 24 as well as to the state section 22.

[0046] Figure 3 is a schematic illustration of a logic circuit 30 representing W15[i+1]= W16[i] = f(W0[i], W1[i], W9[i], W14[i]), i.e. the logic function that is implemented in order to create W15 of an induced data block based on W0, W1, W9 and W14 of the previous data block.

[0047] Figure 4 is a schematic illustration of a logic circuit 40 representing the arithmetic logic that is used for calculating the state words A and E of the next state in the state pipeline. The state words A and E of stage i+1 is calculated by manipulation of W0 and words A-H of the previous stage.

[0048] Reference is now made to **Figure 5**, which is a schematic diagram illustrating one job being processed in the data (W) section 24 in a simple W waterfall implementation, herein referred to as a W waterfall, according to some embodiments of the present invention. In the waterfall implementation, instead of creating a data block of 16 words in each stage, the data words may be arranged in succession 60. In the implementation of Figure 5, the words are arranged in one column. On each cycle, a new W is created according to the previous 16 words. As explained in reference to Figure 3, input data block 100 that includes the first 16 words is provided. The first word W0 is sampled by state section 22 for generation of the first state. The seventeenth word W16 is created based on the first, second, tenth and fourteenth words (W0, W1, W9 and W14), for example as described in detail herein above. On the next cycle, W0 becomes irrelevant and data is taken from W1-W16 instead of W0-W15, respectively, to produce the next word (W17) and the corresponding state in the state section. Then, W1 becomes irrelevant and words W2-W17 are used, and so on. This process is called herein a waterfall process. After 16 cycles the waterfall process continues with words W16-W31 and the first 16 words W0-W15 are irrelevant. At this stage, a new data block 100 of 16 words can enter the W waterfall. Therefore, in this implementation, a new job can enter the W waterfall every 16 cycles. Since only one word of 32 bits changes every cycle, power is saved. In this implementation, however, the performance is 1/16 of the performance of a full pipeline engine, since new data can be received once in every 16 cycles.

[0049] Reference is now made to **Figure 6**, which is a schematic illustration of a W waterfall array 300, which allows a new job entry, i.e. new data input, on every cycle, rather than new data every 16 cycles when using one column, according to some embodiments of the present invention. In the W waterfall array implementation, 16 columns 70 of W waterfalls are set in an array format, wherein a new job, i.e. new data input, is entered to another column at each cycle. After sixteen cycles, the first 16 words of the first column are irrelevant, as described in detail above, and a new job can be entered to the first column, taking the place of the first 16 words. In the next cycle, a new job can be entered to the second column, and so on. Accordingly, during every 16 cycles, jobs i to i+15 are entered.

[0050] Accordingly, in the efficient W waterfall array implementation of Figure 6, every column may represent a process where a new job is being entered once in every 16 cycles and occupies the place of words W0-W15 and then for the next 16 cycles the next 16 words are generated and so on. When a job that entered gets to word W63, after 64 cycles, a column maintains four jobs, one in the places of words W0-W15, one in the places of words W16-W31, one in the places of words W32-W47 and one in the places of words W48-W63. In order to provide performance of a new job per cycle instead of job per 16 cycles, 16 columns are used so a new job can be inserted in the place of words W0-W15 of another column in each cycle. When a processed job reaches W63, a signature may be produced and the process of this job ends.

[0051] Reference is now made to **Figure 7**, which is a schematic illustration of an optimized W waterfall array, according to some embodiments of the present invention. In this implementation, the data words are arranged in rows 80 (row[0]-row[63]), such that the words W0 of all the 16 processed jobs are in row 0 and so on, i.e. the sixteen words W[k]s of the 16 jobs are in row [k]. In each cycle, for each row k in the array, if k>15, an input stage is performed in which a new word W is generated for a selected column i, by receiving a W0 multiplexed value from row k-16, a W1 multiplexed value from row k-15, a W9 multiplexed value from row k-7 and a W14 multiplexed value from row k-2, demultiplexing the multiplexed values in order to feed the relevant values for the selected column i and creating a new word W according to the logic described with reference to Figure 3. On each cycle, the subsequent column i in row k is selected until the end of row k is reached after 16 cycles and so forth. Additionally, an output stage is performed in which a multiplexed value is generated by multiplexing the words in row k, to be used as W0, W1, W9 and W14 multiplexed values for generating a new word W in each of rows k+16, k+15, k+7 and k+2. The selection and multiplexing may be controlled by a selection and/or control logic which may be included in process module 52. This structure allows insertion of a new job every cycle, each time to a next column.

[0052] Reference is now made to **Figure 8**, which is a schematic illustration of a simple state waterfall implementation 400 in state section 22, representing one job being processed in state section 22, according to some embodiments of the present invention. The state words A, B, C, D, E, F, G and H are generating words A and E of the next state. Since words B, C and D are generated by shift of A to B, B to C and C to D, they are represented as A[i-3], A[i-2], A[i-1], respectively. Similarly, F[i+1], G[i+2] and H[i+3] are generated from E[i]. A and E are

generated every new cycle based of the relevant data word from the W section and the older A[i-4] and E[i-4] are not relevant anymore. Therefore, a new job can get into a single-column state waterfall every 4 cycles.

[0053] Reference is now made to **Figure 9**, which is a schematic illustration of an exemplary optimized state waterfall array, according to some embodiments of the present invention. In this implementation, the state words are structured in rows. Row 0 includes four couples of A[0] and E[0] state words of respective four jobs, in row [k] there are four couples of the A[k] and E[k] state words. This structure allows a job injection every cycle, each time to the next column in the row. In this implementation, the state words are arranged in rows, such that four couples of A[0] and E[0] state words of the four processed jobs are in row 0 and so on, i.e. four couples of A[k] and E[k] state words of the four processed jobs are in row [k]. In each cycle, for each row k in the array, if k>3, an input stage is performed in which new A and E state word are generated for a selected column i that includes a selected job, by receiving multiplexed values of A-K from rows k-1, k-2, k-3 and k-4, i.e. A[k-1] and E[k-1] (A and E), A[k-2] and E[k-2] (B and F), A[k-3] and E[k-3] (C and G) and A[k-4] and E[k-4] (D and H). The A-F values are demultiplexed in order to feed the relevant values for the selected column i and creating new A and E according to the logic described with reference to Figure 4. On each cycle, the subsequent column i in row k is selected until the end of row k is reached after 4 cycles and so forth. Additionally, an output stage is performed in which a multiplexed value is generated by multiplexing the state words in row k, to be used as A-F multiplexed values for generating new state words A and E in each of rows k+1, k+2, k+3 and k+4. The selection and multiplexing may be controlled by a selection and/or control logic which may be included in process module 52. This structure allows insertion of a new job every cycle, each time to a next column.

[0054] Reference is now made to **Figure 10**, which is a schematic illustration of the waterfall implementations in the data (W) and state sections, according to some embodiments of the present invention. As shown in Figure 10, the waterfall implementations enable a large amount of jobs to be processed concurrently, wherein each job "falls" towards the 64th stage in each cycle, thus allowing a new job to enter, to another column on each cycle.

[0055] Reference is now made to **Figure 11**, which is a schematic flowchart illustrating a method 600 for hash calculation according to some embodiments of the present invention. As indicated in block 510, the method may include receiving an input data block to a data pipeline, the data block may include a sequence of data words including X data words,

wherein X is a known number. For example, the input data block may include 16 words of 32 bits each. As indicated in block 520, the method may include calculating, in every clock cycle of the clock module, a new data word based on the last calculated X data words. As indicated in block 530, the method may include performing a stage of the state pipeline in each clock cycle of the clock module, in which a state is calculated based on input from the data pipeline, the input includes the last calculated X data words. As indicated in block 540, the method may include outputting the hash via an output module every predetermined number of clock cycles.

[0056] In some embodiments of the present invention, the calculated state includes a sequence of eight state words, wherein the method further comprises calculating, in each clock cycle, a first and fifth new state words of the sequence, in order to form a new state of sequenced eight words based of the previous state's words

[0057] In some embodiments of the present invention, the method may further include inserting, after X clock cycles, a new input data block instead of the first X data words of the previously inserted input data block.

[0058] In some embodiments of the present invention, the engine has an array arrangement, the array has X columns to which input data blocks can be inserted, wherein the method further comprises receiving a new input data blocks to another of the X columns on every clock cycle, once the first X data words in the column become irrelevant. Each column may include up to four different input data blocks in process.

[0059] In some embodiments of the present invention, the method may further include providing to a row in said array arrangement, in each clock cycle, multiplexed values from previous rows, demultiplexing the multiplexed values in order to create a new data word in a selected column, and generating multiplexed word values by multiplexing data words of the row, for generating new words in following rows.

[0060] In some embodiments of the present invention, the engine has an array arrangement in the state pipeline, the array has four columns, to which state sequences can be inserted, each state sequence is represented by four couples of a first and a fifth words, wherein the method further comprises receiving a new state sequence to another of the four columns on every clock cycle, once the first four couples in the column become irrelevant.

[0061] In some embodiments of the present invention, the method may further include providing to a row in said array arrangement, in each clock cycle, multiplexed values from previous rows, demultiplexing the multiplexed values in order to create a new state word in a selected column, and generating multiplexed word values by multiplexing state words of the row, for generating new words in following rows.

[0062] Although various features of the invention may be described in the context of a single embodiment, the features may also be provided separately or in any suitable combination. Conversely, although the invention may be described herein in the context of separate embodiments for clarity, the invention may also be implemented in a single embodiment.

[0063] Reference in the specification to "some embodiments", "an embodiment", "one embodiment" or "other embodiments" means that a particular feature, structure, or characteristic described in connection with the embodiments is included in at least some embodiments, but not necessarily all embodiments, of the inventions.

[0064] It is to be understood that the phraseology and terminology employed herein is not to be construed as limiting and are for descriptive purpose only.

[0065] The principles and uses of the teachings of the present invention may be better understood with reference to the accompanying description, figures and examples.

[0066] It is to be understood that the details set forth herein do not construe a limitation to an application of the invention.

[0067] Furthermore, it is to be understood that the invention can be carried out or practiced in various ways and that the invention can be implemented in embodiments other than the ones outlined in the description above.

[0068] It is to be understood that the terms “including”, “comprising”, “consisting” and grammatical variants thereof do not preclude the addition of one or more components, features, steps, or integers or groups thereof and that the terms are to be construed as specifying components, features, steps or integers.

[0069] If the specification or claims refer to "an additional" element, that does not preclude there being more than one of the additional element.

[0070] It is to be understood that where the claims or specification refer to "a" or "an" element, such reference is not be construed that there is only one of that element.

[0071] It is to be understood that where the specification states that a component, feature, structure, or characteristic "may", "might", "can" or "could" be included, that particular component, feature, structure, or characteristic is not required to be included.

[0072] The descriptions, examples, methods and materials presented in the claims and the specification are not to be construed as limiting but rather as illustrative only.

[0073] Meanings of technical and scientific terms used herein are to be commonly understood as by one of ordinary skill in the art to which the invention belongs, unless otherwise defined.

[0074] The present invention may be implemented in the testing or practice with methods and materials equivalent or similar to those described herein.

[0075] While the invention has been described with respect to a limited number of embodiments, these should not be construed as limitations on the scope of the invention, but rather as exemplifications of some of the preferred embodiments. Other possible variations, modifications, and applications are also within the scope of the invention.

What is claimed is:

1. A hash engine comprising:

an input module for receiving data blocks;

a memory;

a clock module to provide clock cycles;

a process module including a data pipeline and a state pipeline for calculating a hash from a received data block, the process module is configured to:

receive an input data block to the data pipeline, the data block includes a sequence of data words including X data words, wherein X is a known number;

calculate, in every clock cycle of the clock module, a new data word based on the last calculated X data words; and

perform a stage of the state pipeline in each clock cycle of the clock module, in which a state is calculated based on input from the data pipeline, the input includes the last calculated X data words;

and

an output module to output the hash every predetermined number of clock cycles.

2. The engine of claim 1, wherein X is equal 16, and wherein each data word is of 32 bits.

3. The engine of claim 1, wherein the calculated state includes a sequence of eight state words, wherein the process module is further configured to calculate, in each clock cycle, a first and fifth new state words of the sequence, in order to form a new state of sequenced eight words based of the previous state's words.

4. The engine of claim 1, wherein after X clock cycles, a new input data block is inserted instead of the first X data words of the previously inserted input data block.

5. The engine of claim 1, wherein the engine has an array arrangement, the array has X columns to which input data blocks can be inserted, wherein the engine is configured

to receive a new input data blocks to another of the X columns on every clock cycle, once the first X data words in the column become irrelevant.

6. The engine of claim 5, wherein each column may include up to four different input data blocks in process.

7. The engine of claim 5, further configured to provide to a row in said array arrangement, in each clock cycle, multiplexed values from previous rows, to demultiplex the multiplexed values in order to create a new data word in a selected column, and to generate multiplexed word values by multiplexing data words of the row, for generating new words in following rows.

8. The engine of claim 3, wherein the engine has an array arrangement in the state pipeline, the array has four columns, to which state sequences can be inserted, each state sequence is represented by four couples of a first and a fifth words, wherein the engine is further configured to receive a new state sequence to another of the four columns on every clock cycle, once the first four couples in the column become irrelevant.

9. The engine of claim 8, further configured to provide to a row in said array arrangement, in each clock cycle, multiplexed values from previous rows, to demultiplex the multiplexed values in order to create a new state word in a selected column, and to generate multiplexed word values by multiplexing state words of the row, for generating new words in following rows.

10. A method for hash calculation, the method comprising:

receiving data blocks via an input module;

providing clock cycles by a clock module;

calculating a hash from a received data block by a process module including a data pipeline and a state pipeline, the hash calculation comprising:

receiving an input data block to the data pipeline, the data block includes a sequence of data words including X data words, wherein X is a known number;

calculating, in every clock cycle of the clock module, a new data word based on the last calculated X data words; and

performing a stage of the state pipeline in each clock cycle of the clock module, in which a state is calculated based on input from the data pipeline, the input includes the last calculated X data words;

and

outputting the hash via an output module every predetermined number of clock cycles.

11. The method of claim 10, wherein X is equal 16, and wherein each data word is of 32 bits.

12. The method of claim 10, wherein the calculated state includes a sequence of eight state words, wherein the method further comprises calculating, in each clock cycle, a first and fifth new state words of the sequence, in order to form a new state of sequenced eight words based of the previous state's words.

13. The method of claim 10, further comprising inserting, after X clock cycles, a new input data block instead of the first X data words of the previously inserted input data block.

14. The method of claim 10, wherein the engine has an array arrangement, the array has X columns to which input data blocks can be inserted, wherein the method further comprises receiving a new input data blocks to another of the X columns on every clock cycle, once the first X data words in the column become irrelevant.

15. The method of claim 14, wherein each column may include up to four different input data blocks in process.

16. The method of claim 14, further comprising providing to a row in said array arrangement, in each clock cycle, multiplexed values from previous rows, demultiplexing the multiplexed values in order to create a new data word in a selected column, and generating multiplexed word values by multiplexing data words of the row, for generating new words in following rows.

17. The method of claim 12, wherein the engine has an array arrangement in the state pipeline, the array has four columns, to which state sequences can be inserted, each state sequence is represented by four couples of a first and a fifth words, wherein the method further comprises receiving a new state sequence to another of the four columns on every clock cycle, once the first four couples in the column become irrelevant.

18. The method of claim 17, further comprising providing to a row in said array arrangement, in each clock cycle, multiplexed values from previous rows, demultiplexing the multiplexed values in order to create a new state word in a selected column, and generating multiplexed word values by multiplexing state words of the row, for generating new words in following rows.

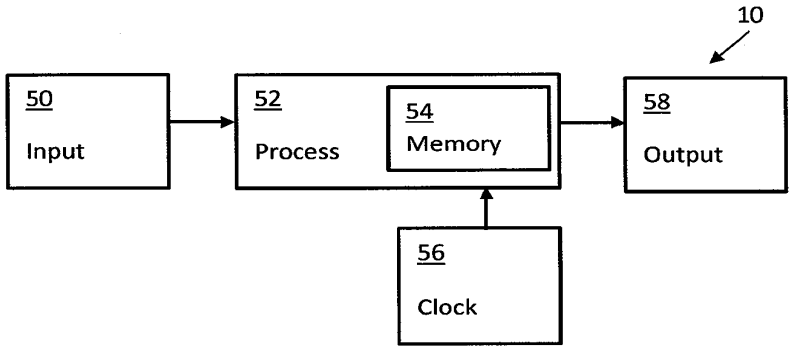

Figure 1

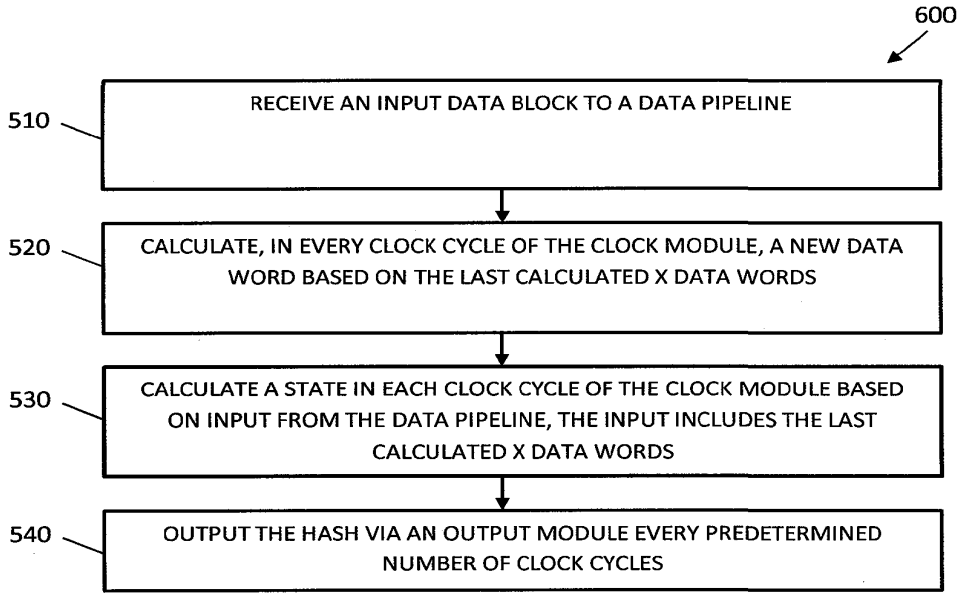

Figure 11

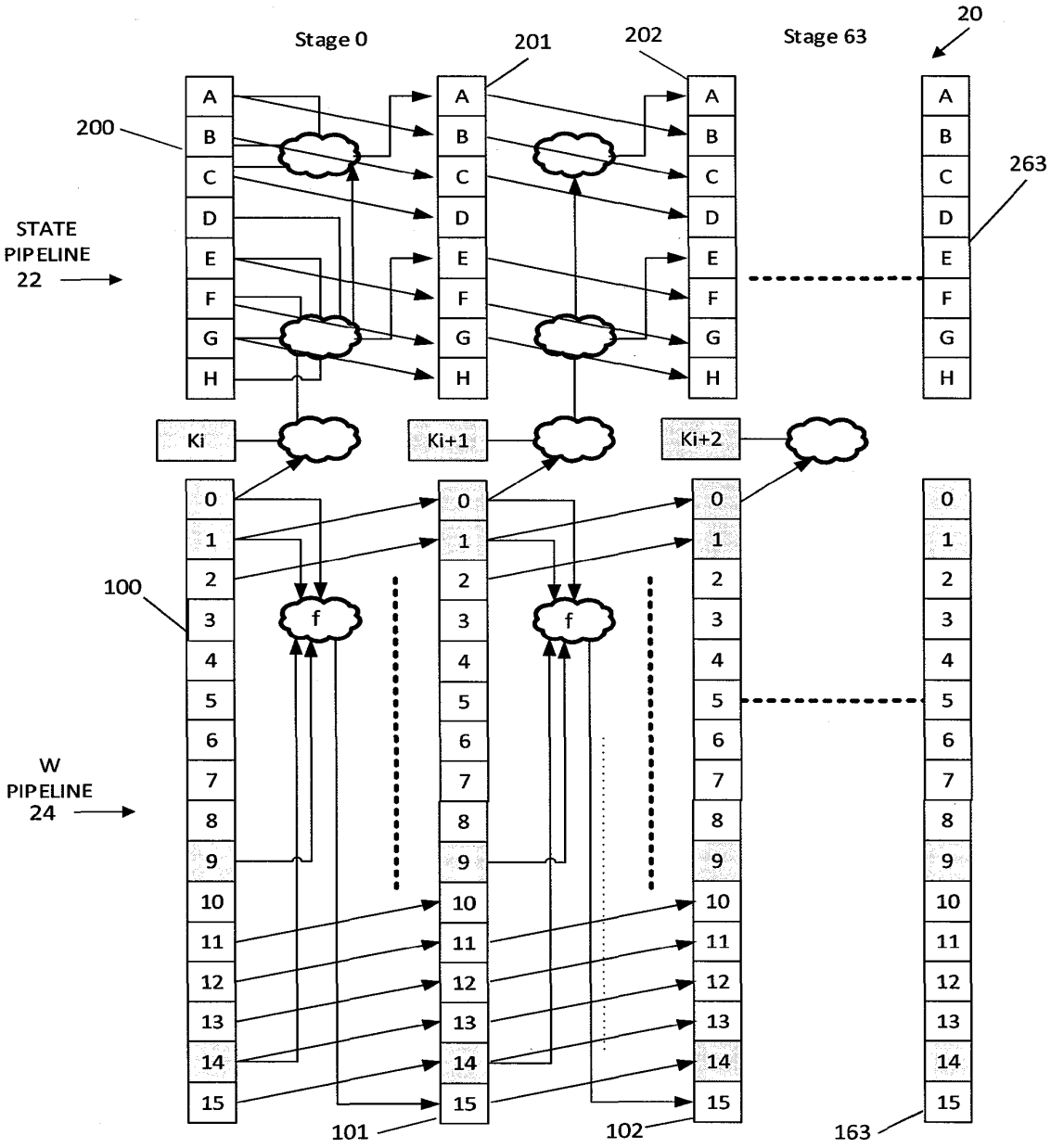

Figure 2
Prior Art

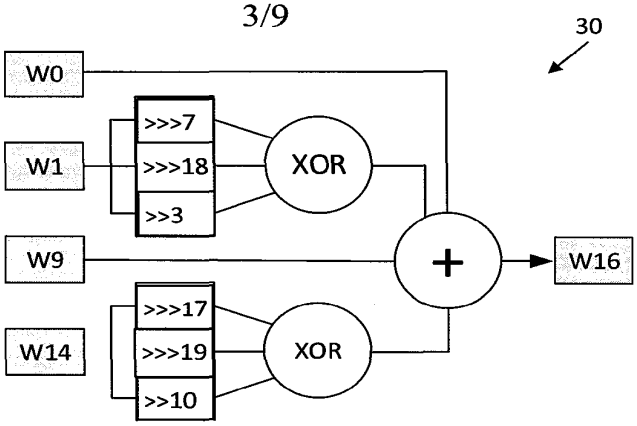

Figure 3

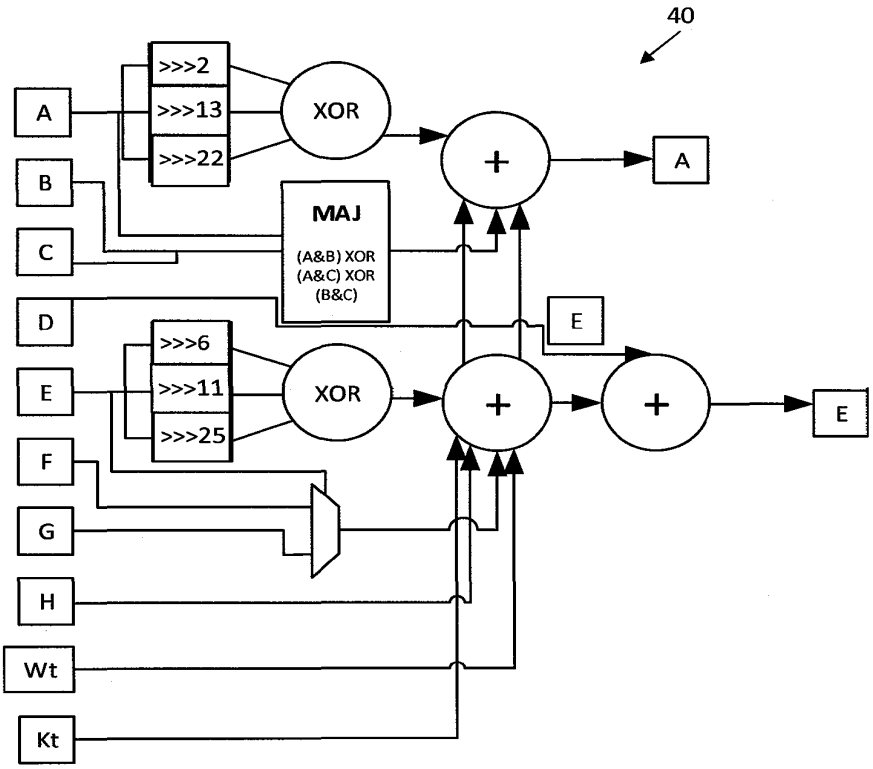

Figure 4

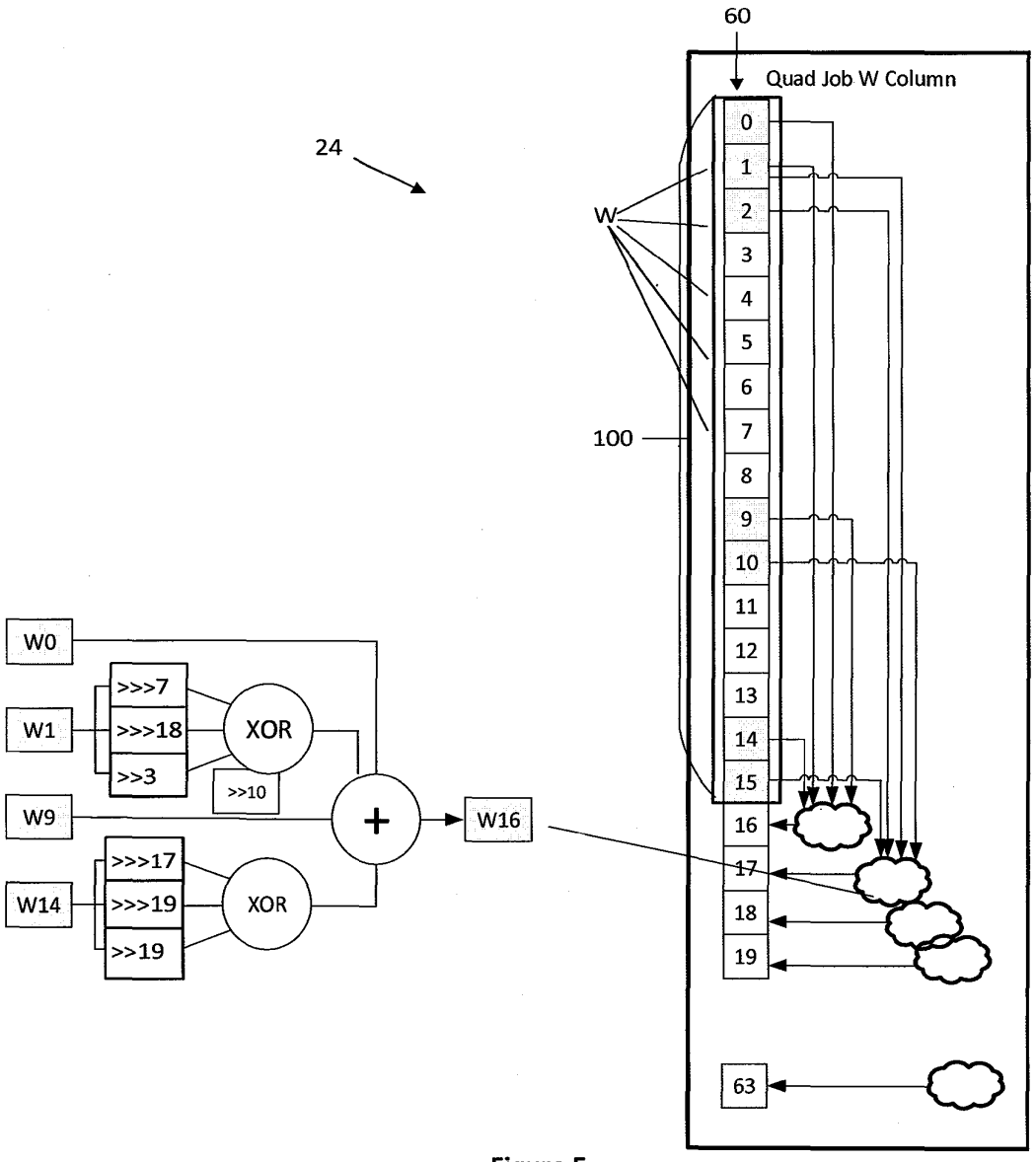
60
Quad Job W Column
24
W
100
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
63
W0
W1
W9
W14
>>>7
>>>18
>>3
XOR
>>10
+
W16
>>>17
>>>19
>>19
XOR

Figure 5

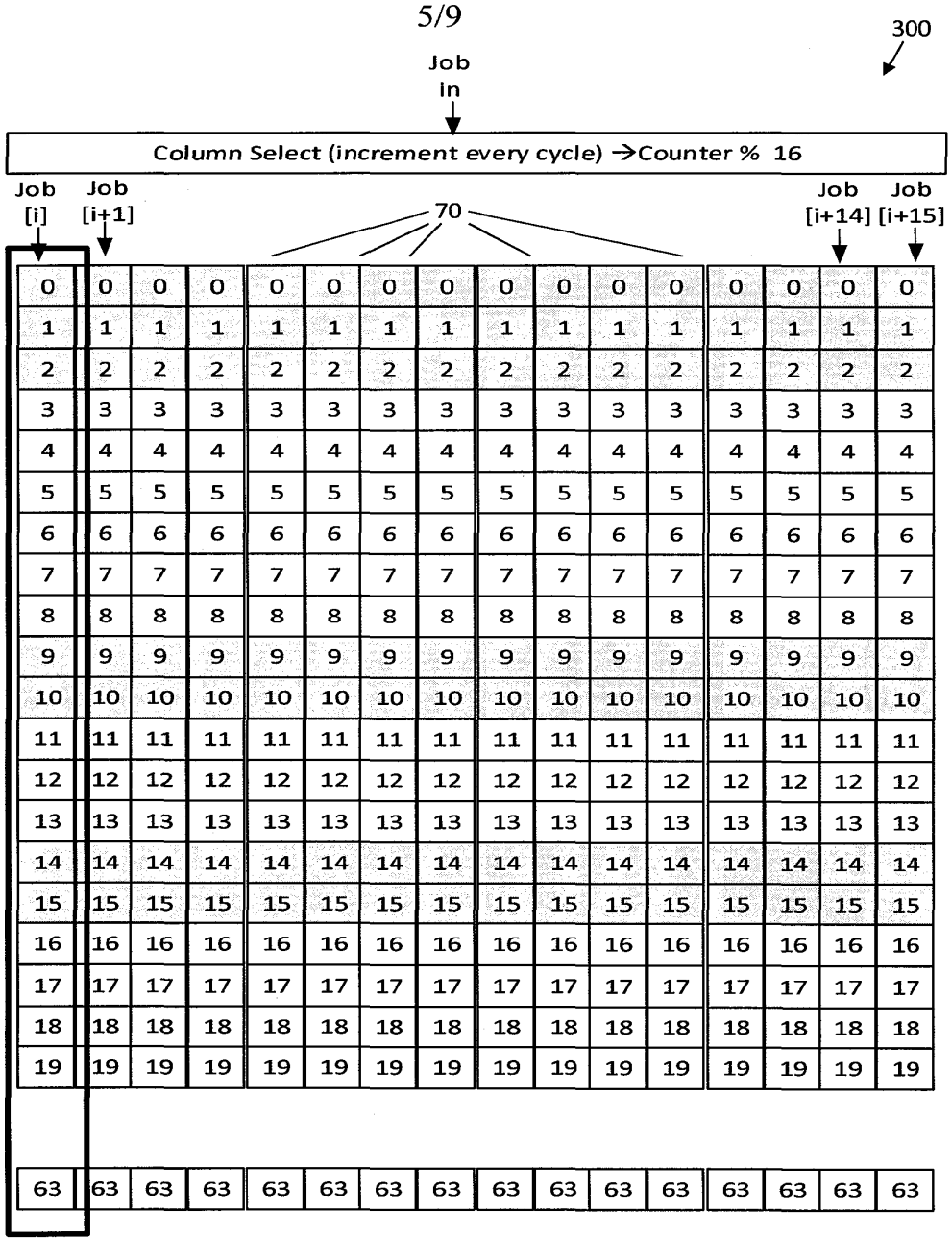
300
Job in
Column Select (increment every cycle) →Counter % 16
Job [i]
Job [i+1]
70
Job [i+14]
Job [i+15]

Figure 6

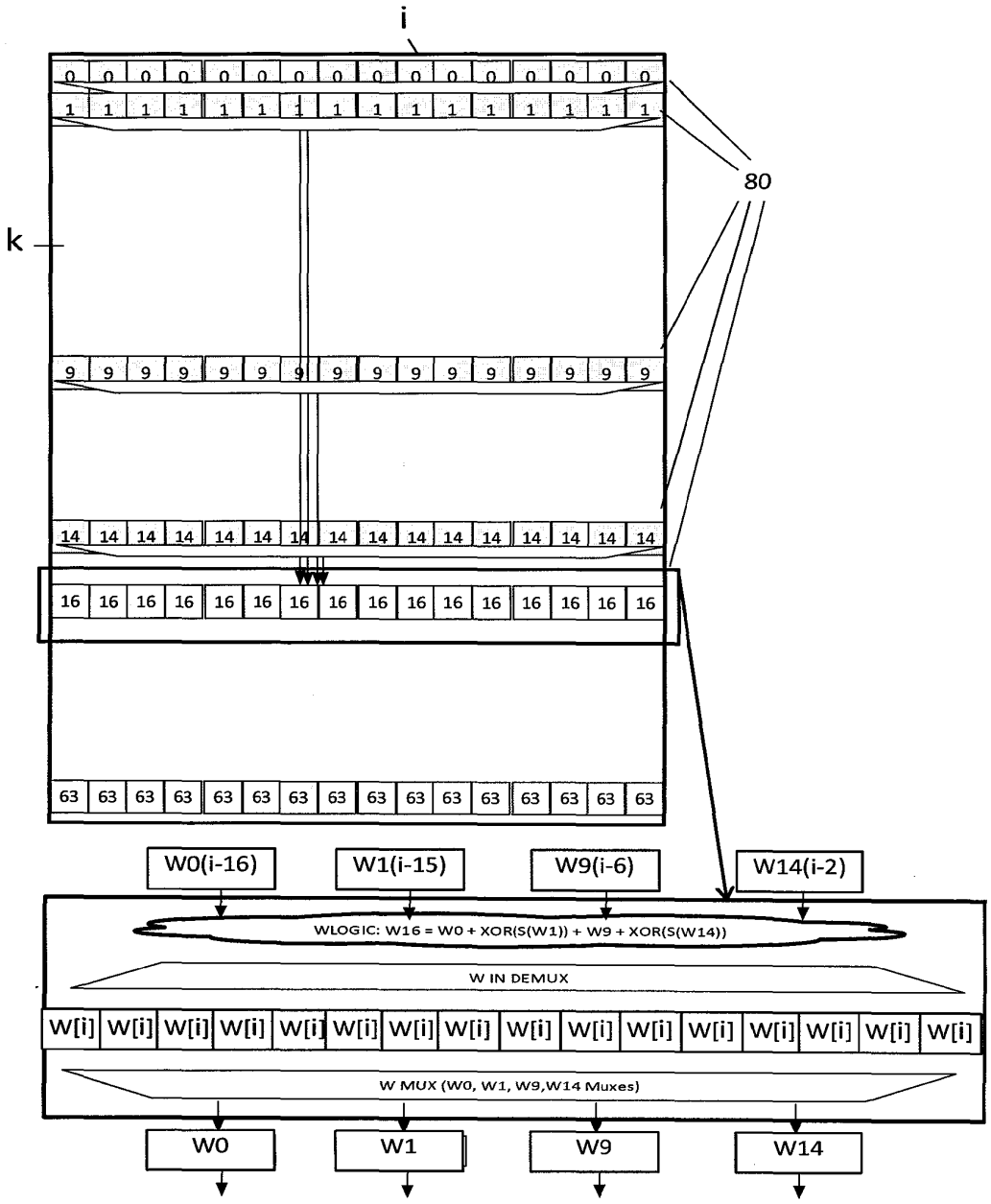
i
k
80
W0(i-16)
W1(i-15)
W9(i-6)
W14(i-2)
WLOGIC: W16 = W0 + XOR(S(W1)) + W9 + XOR(S(W14))
W IN DEMUX
W MUX (W0, W1, W9,W14 Muxes)
W0
W1
W9
W14

Figure 7

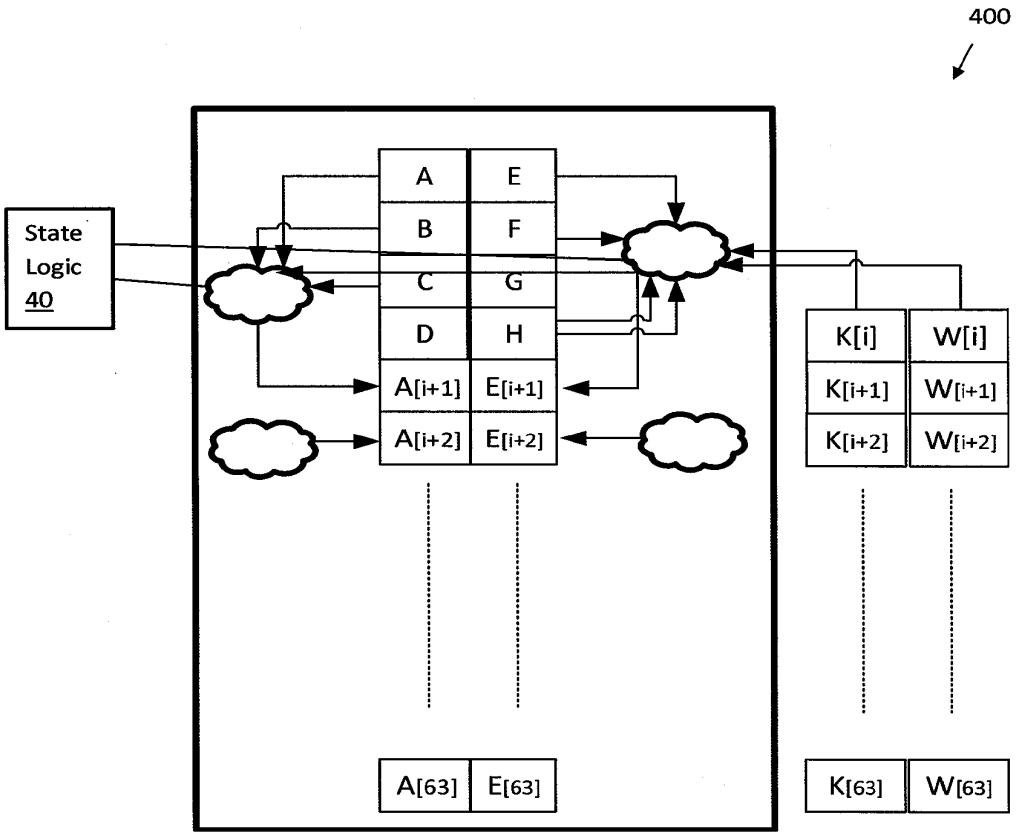
400
State Logic 40
A
E
B
F
C
G
D
H
A[i+1]
E[i+1]
A[i+2]
E[i+2]
A[63]
E[63]
K[i]
W[i]
K[i+1]
W[i+1]
K[i+2]
W[i+2]
K[63]
W[63]

Figure 8

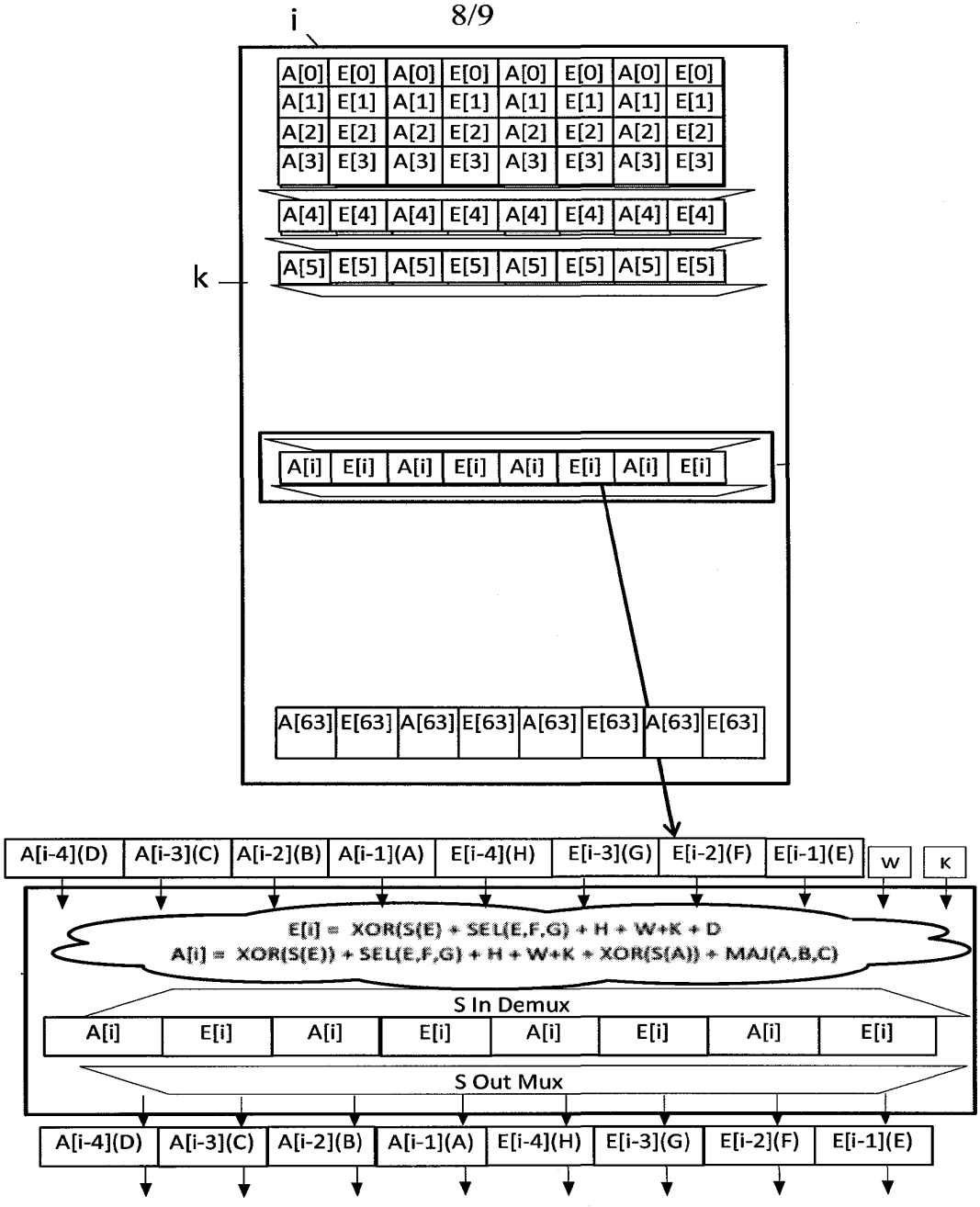
i
A[0] E[0] A[0] E[0] A[0] E[0] A[0] E[0]
A[1] E[1] A[1] E[1] A[1] E[1] A[1] E[1]
A[2] E[2] A[2] E[2] A[2] E[2] A[2] E[2]
A[3] E[3] A[3] E[3] A[3] E[3] A[3] E[3]
A[4] E[4] A[4] E[4] A[4] E[4] A[4] E[4]
k
A[5] E[5] A[5] E[5] A[5] E[5] A[5] E[5]
A[i] E[i] A[i] E[i] A[i] E[i] A[i] E[i]
A[63] E[63] A[63] E[63] A[63] E[63] A[63] E[63]
A[i-4](D) A[i-3](C) A[i-2](B) A[i-1](A) E[i-4](H) E[i-3](G) E[i-2](F) E[i-1](E)
W
K
E[i] = XOR(S(E) + SEL(E,F,G) + H + W+K + D
A[i] = XOR(S(E)) + SEL(E,F,G) + H + W+K + XOR(S(A)) + MAJ(A,B,C)
S In Demux
A[i] E[i] A[i] E[i] A[i] E[i] A[i] E[i]
S Out Mux
A[i-4](D) A[i-3](C) A[i-2](B) A[i-1](A) E[i-4](H) E[i-3](G) E[i-2](F) E[i-1](E)

Figure 9

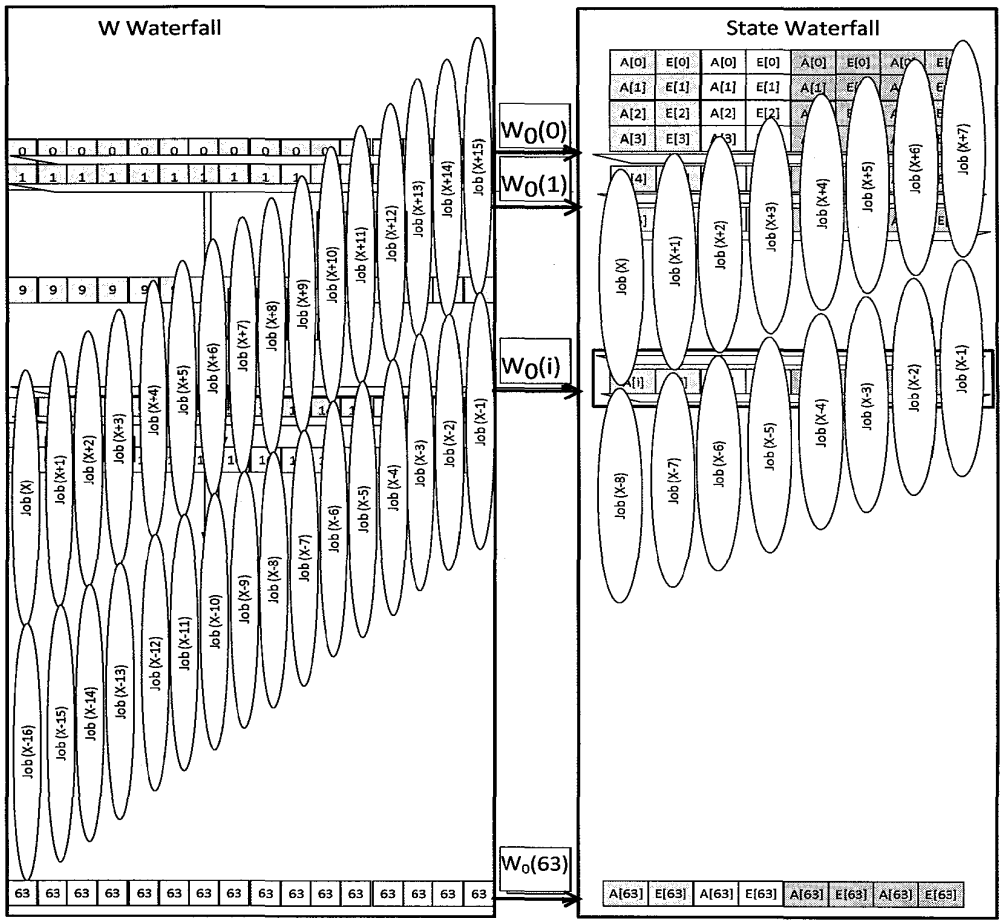

Figure 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2015/051060

A. CLASSIFICATION OF SUBJECT MATTER

IPC (2016.01) G06F 9/38, G06F 17/10, H04L 9/28, G06Q 20/06, G06Q 20/36, G06Q 20/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC (2016.01) G06F 9/38, G06F 17/10, G06Q 20/06, G06Q 20/36, G06Q 20/38, H04L 9/28

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Databases consulted: Esp@cenet, Google Patents, Google Scholar

Search terms used: hash calculation pipeline waterfall power consumption clock cycle state stage parallel

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7684563 B1 OLSON et al. 23 Mar 2010 (2010/03/23) The whole document	1,2,10,11
A	The whole document	3-9,12-18

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 Feb 2016	15 Feb 2016

Name and mailing address of the ISA:	Authorized officer
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Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IL2015/051060

Patent document cited search report	Publication date	Patent family member(s)	Publication Date
US 7684563 B1	23 Mar 2010	US 7684563 B1	23 Mar 2010

Form PCT/ISA/210 (patent family annex) (January 2015)

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/484,728	01/06/2020	Stephen Barbour	91A-3US	1944

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EXAMINER	
REAGAN, JAMES A	

ART UNIT	PAPER NUMBER
3688	

MAIL DATE	DELIVERY MODE
04/19/2022	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 16/484,728	Applicant(s) Barbour, Stephen	
	Examiner JAMES A REAGAN	Art Unit 3688	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 01/06/2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-41 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-26 and 28-41 is/are rejected.

8) ☑ Claim(s) 27 is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☑ All b)☐ Some** c)☐ None of the:

1.☑ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date See Continuation Sheet.

3) ☑ Interview Summary (PTO-413) Paper No(s)/Mail Date 1.

4) ☐ Other: _____.

Continuation of Attachment(s) 2) Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date: 02/07/2020, 05/13/2021, 08/09/2021, and 04/15/2022

DETAILED ACTION

Acknowledgments

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

This action is in reply to the application filed on **01/06/2020**.

Claims 1-41 are currently pending and have been examined.

Allowable Subject Matter

Claim 27 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Information Disclosure Statement

The Information Disclosure Statements filed **02/07/2020, 05/13/2021, 08/09/2021,** and **04/15/2022** have been considered. Initialed copies of the Form 1449 are enclosed herewith.

Claim Interpretation

After careful review of the original specification, the Examiner is unable to locate any lexicographic definitions with the required clarity, deliberateness, and precision. See MPEP §2111.01 IV.

Terms such as "when", "if", "only if", "on the condition", "in the event" and "in a case where" are representative of optional limitations; therefore, optional or conditional language do not narrow the claims because they can always be omitted.

35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, 2nd Paragraph, Failure To Particularly Point out and Distinctly Claim (Indefinite)

The following is a quotation of 35 U.S.C. 112(b):

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the Applicant regards as his invention.

Claim 24 is rejected under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the Applicant regards as the invention. The claim appears to be written as a "use claim." See MPEP 2173.05(q).

Claims 1, 3, 7, 9, 13, 14, 18, 20, 21, 24-29, 35, and 40 are rejected under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the Applicant regards as the invention. The Examiner cannot determine the metes and bounds of the claim because the claim has been written in the alternative using an "or" statement. For the purposes of this examination, the Examiner will assume that the claim is a properly written Markush-type limitation: …one of the group consisting of [A, B, *and* C].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 8, 10-18, 24-26, 28, 29, 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belady et al. (USPGP 2014/0096837 A1), hereinafter **BELADY**, in view of Gleichauf (USPGP 2018/0109541 A1), hereinafter **GLEIFCHAUF**.

Claims 1 and 24:

BELADY as shown below discloses the following limitations:

- *a source of combustible gas produced from an oil production, storage, or processing facility;* (see at least Figure 1 as well as associated and related text; paragraphs 0004, 0028)
- *a generator connected to the source of combustible gas;* (see at least Figure 1 as well as associated and related text; paragraphs 0004, 0028)
- *a blockchain mining device connected to the generator.* (see at least paragraph 0002)

BELADY discloses a server but does not specifically disclose *a blockchain mining device*. However, **GLEIFCHAUF**, in at least paragraphs 0018 and 0051 discloses using servers for blockchain mining and verification. In the competitive business climate, there is a profit-driven motive to maximize the profitability of goods and services that are provided or marketed to customers. Enterprises typically use business planning to make decisions in order to maximize profits. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine/modify the method of **BELADY** with the technique of **GLEIFCHAUF** because, "...data centers often consume large quantities of electrical power, especially by the computing devices themselves. Increasingly, the cost of obtaining such electrical power is becoming a primary determinant in the economic success of a data center. Consequently, data centers are being located in areas where the data centers can obtain electrical power in a cost-effective manner. In some instances, data centers are being located in areas that can provide inexpensive electrical power directly, such as areas in which electricity can be purchased from electrical utilities or governmental electrical facilities inexpensively. In other instances, however, data centers are being located in areas where natural resources, from which electrical power can be derived, are abundant and can be obtained inexpensively. For example, natural gas is a byproduct of oil drilling operations and is often considered a waste byproduct since it cannot be economically captured and brought to market. Consequently, in areas where oil drilling operations are being conducted, natural gas is often available for free, or at a minimal

cost. As will be recognized by those skilled in the art, natural gas can be utilized to generate electrical power, such as, for example, through a fuel cell or by generating steam to drive a steam powered electrical generator. As another example, municipal landfills and other like waste treatment and processing centers can produce a gas commonly referred to as "biogas" which can, likewise, be utilized to generate electrical power that can, then, be consumed by the computing devices of a data center. Unfortunately, gas that is available at reduced cost cannot always be provided at a well-maintained pressure. Instead, the pressure at which such gases are provided can often vary substantially, including both positive and negative gas pressure spikes where the pressure of the provided gas increases, or decreases, respectively. Not only can such gas pressure spikes damage equipment that utilizes such gas, but they can also be disruptive to the entire gas supply network." (**BELADY**: paragraph 0004). Moreover, each of the elements claimed are all shown by the prior art of record but not combined as claimed. However, the technical ability exists to combine the elements as claimed and the results of the combination are predictable. Therefore, when combined, the elements perform the same function as they did separately. (*KSR v. Teleflex*, 127 S. Ct. 1727 (2007)). Additionally, there is a recognized problem or need in the art including market pressure, design need, etc., and there are a finite number of identified predictable solutions. Consequently, those in the art could have pursued known solutions with reasonable expectation of success. (*KSR v. Teleflex*, 127 S. Ct. 1727 (2007)).

Claims 2 and 28:

The combination of **BELADY**/**GLEIFCHAUF** discloses the limitations as shown in the rejections above. **BELADY** further discloses:

- *isolated from a sales gas line and an external electrical power grid.*
- *the hydrocarbon production well, storage, or processing facility comprises an oil or gas well that is isolated from a sales gas line and an external electrical power grid.*

See at least Figure 1 as well as associated and related text, and paragraphs 0004 and 0028.

Claims 3 and 29:

The combination of **BELADY**/**GLEIFCHAUF** discloses the limitations as shown in the rejections above. **BELADY** further discloses*:*

- *the oil production, storage, or processing facility comprises a remote oil well;*
- *the source of combustible gas comprises the remote oil well;*
- *the remote oil well is connected to produce a continuous flow of combustible gas to power the generator.*

See at least Figure 1 as well as associated and related text, and paragraphs 0004 and 0028.

Claim 8:

The combination of **BELADY**/**GLEIFCHAUF** discloses the limitations as shown in the rejections above. **BELADY** further discloses *the generator and blockchain mining device are located adjacent to the oil production, storage, or processing facility.* See at least Figure 1 as well as associated and related text, and paragraphs 0004 and 0028.

Claims 10, 11, and 34:

The combination of **BELADY**/**GLEIFCHAUF** discloses the limitations as shown in the rejections above. **GLEIFCHAUF** further discloses*:*

- *the blockchain mining device has a network interface and a mining processor;*
- *the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;*
- *the mining processor is connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database.*
- *the network is a peer to peer network;*
- *the blockchain database is a distributed database stored on plural nodes in the peer to peer network;*
- *the blockchain database stores transactional information for a digital currency.*
- *operating the blockchain mining device to:*
- *mine transactions with the blockchain mining device;*

- *communicate wirelessly through the internet to communicate with a blockchain database.*

See at least paragraphs 0002-0005, 0014, 0016, 0018, 0021, and 0024. In the competitive business climate, there is a profit-driven motive to maximize the profitability of goods and services that are provided or marketed to customers. Enterprises typically use business planning to make decisions in order to maximize profits. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine/modify the method of **BELADY** with the technique of **GLEIFCHAUF** because there is a recognized problem or need in the art including market pressure, design need, etc., and there are a finite number of identified predictable solutions. Consequently, those in the art could have pursued known solutions with reasonable expectation of success. (*KSR v. Teleflex*, 127 S. Ct. 1727 (2007)).

Claims 12, 13, 35, and 36:

The combination of **BELADY**/**GLEIFCHAUF** discloses the limitations as shown in the rejections above. **GLEIFCHAUF** further discloses:

- *a controller is connected to modulate a power load level exerted by the blockchain mining device on the generator, by increasing or decreasing the mining activity of the mining processor.*
- *the mining processor comprises a plurality of mining processors;*
- *the controller is connected to modulate the maximum power load level by increasing or decreasing a maximum number of mining processors that are engaged in mining transactions.*
- *the blockchain mining device comprises a plurality of mining processors;*
- *modulating comprises modulating the power load level by increasing or decreasing a maximum number of mining processors that are engaged in mining transactions.*

See at least paragraphs 0027 and 0029. In the competitive business climate, there is a profit-driven motive to maximize the profitability of goods and services that are provided or marketed to customers. Enterprises typically use business planning to make decisions in order to maximize profits. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine/modify the method of **BELADY** with the technique of **GLEIFCHAUF** because there is a recognized problem or need in the art including market pressure, design need, etc., and there are a finite number of identified predictable

solutions. Consequently, those in the art could have pursued known solutions with reasonable expectation of success. (*KSR v. Teleflex*, 127 S. Ct. 1727 (2007)).

Claim 14:

The combination of **BELADY/GLEIFCHAUF** discloses the limitations as shown in the rejections above.

BELADY further discloses:

- *the oil production, storage, or processing facility comprises a remote oil well;*
- *the source of combustible gas comprises the remote oil well, which is connected to produce a continuous flow of combustible gas to operate the generator.*

See at least Figure 1 as well as associated and related text, and paragraphs 0004 and 0028.

Claims 15, 16, 37, 38, and 41:

The combination of **BELADY/GLEIFCHAUF** discloses the limitations as shown in the rejections above.

BELADY further discloses:

- *the controller is connected to modulate the power load level in response to variations in a production rate of combustible gas from the remote oil well.*
- *a production rate of combustible gas from the remote oil well varies between a daily minimum production rate and a daily maximum production rate;*
- *while the production rate is above the daily minimum production rate, the controller is set to limit the power load level to at or below a power level producible by the generator when the production rate is at the daily minimum production rate.*
- *the power load level is limited to above a power level produced by the generator when the production rate is at the daily maximum production rate.*

See at least paragraph 0015.

Claims 17, 18, and 40:

The combination of **BELADY**/**GLEIFCHAUF** discloses the limitations as shown in the rejections above.

BELADY further discloses:

- *the controller is set to divert to a load bank excess electricity produced by the generator.*
- *a production rate of combustible gas from the remote oil well varies between a daily minimum production rate and a daily maximum production rate;*
- *the controller is set to limit the power load level to above a power level producible by the generator when the production rate is at the daily minimum production rate;*
- *a backup source, of fuel or electricity, is connected make up a shortfall in fuel or electricity, respectively, required to supply the blockchain mining device with the power load level.*

See at least Figure 2 as well as associated and related text, and paragraphs 0002, 0005, 0015, .

Claims 25 and 26:

The combination of **BELADY**/**GLEIFCHAUF** discloses the limitations as shown in the rejections above.

BELADY further discloses:

- *prior to using the source of combustible gas:*
- *disconnecting the source of combustible gas from a combustible gas disposal device at the hydrocarbon production well, storage, or processing facility;*
- *connecting the source of combustible gas to operate the blockchain mining device.*
- *connecting the source of combustible gas to operate the blockchain mining device;*
- *diverting gas from a combustible gas disposal or storage device to operate the blockchain mining device.*

See at least Figure 1 as well as associated and related text, and paragraphs 0004 and 0028.

Claims 4-7, 9, 19-23, 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over **BELADY/GLEIFCHAUF** and further in view of Examiner's **OFFICIAL NOTICE**.

Claims 4-7, 9, 30, 31, 33:

The combination of **BELADY/GLEIFCHAUF** discloses the limitations as shown in the rejections above. **BELADY/GLEIFCHAUF** does not specifically disclose:

- *a combustion engine connected to the source of combustible gas and connected to drive the generator.*
- *the combustion engine is a prime mover that is connected to produce oil from the remote oil well.*
- *the combustion engine is a first combustion engine, and further comprising a second combustion engine that is a prime mover that is connected to produce oil from the remote oil well.*
- *the oil production, storage, or processing facility comprise an oil storage or processing unit;*
- *the source of combustible gas comprises the oil storage or processing unit, which has a gas outlet connected to supply combustible gas to operate the generator;*
- *the oil storage or processing unit is connected to receive oil produced from a remote oil well.*
- *oil production, storage, or processing facility comprises a remote oil well, which comprises a plurality of remote oil wells, and one or both of the following conditions are satisfied:*
- *the plurality of remote oil wells are located on a multi-well pad;*
- *the plurality of remote oil wells include a satellite well.*
- *the combustion engine is a first combustion engine, and further comprising:*
- *prior to supplying combustible gas to the first combustion engine, connecting the first combustion engine to receive combustible gas from the remote oil well;*
- *using a second combustion engine as a prime mover to produce oil from the remote oil well.*

However, the Examiner takes **OFFICIAL NOTICE** that it is old and well known in the oil drilling and exploration arts to utilize common and basic machinery and structural layouts during the process of oil production. In the competitive business climate, there is a profit-driven motive to maximize the profitability of goods and services that are provided or marketed to customers. Enterprises typically use business planning to make decisions in order to maximize profits. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine/modify the method of **BELADY/GLEIFCHAUF**

with the technique of utilizing a combustion engines and generators and logical design plans because there is a recognized problem or need in the art including market pressure, design need, etc., and there are a finite number of identified predictable solutions. Consequently, those in the art could have pursued known solutions with reasonable expectation of success. (*KSR v. Teleflex*, 127 S. Ct. 1727 (2007)).

Claim 19:

The combination of **BELADY/GLEIFCHAUF** discloses the limitations as shown in the rejections above. **BELADY/GLEIFCHAUF** does not specifically disclose *a controller is connected to operate a cooling system to maintain the blockchain mining device within a predetermined operating range of temperature.* However, the Examiner takes **OFFICIAL NOTICE** that it is old and well known in the computing arts that server installations generate heat and require cooling systems. In the competitive business climate, there is a profit-driven motive to maximize the profitability of goods and services that are provided or marketed to customers. Enterprises typically use business planning to make decisions in order to maximize profits. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine/modify the method of **BELADY/GLEIFCHAUF** with the technique of utilizing a cooling system because there is a recognized problem or need in the art including market pressure, design need, etc., and there are a finite number of identified predictable solutions. Consequently, those in the art could have pursued known solutions with reasonable expectation of success. (*KSR v. Teleflex*, 127 S. Ct. 1727 (2007)).

Claims 20-23:

The combination of **BELADY/GLEIFCHAUF** discloses the limitations as shown in the rejections above. **BELADY/GLEIFCHAUF** does not specifically disclose*:*

- *the blockchain mining device is mounted on a skid or trailer.*
- *the skid or trailer comprises a generator driven by an engine, which is connected to the source of combustible gas.*
- *the engine comprises a turbine.*
- *the blockchain mining device comprises an intermodal transport container.*

However, the Examiner takes **OFFICIAL NOTICE** that it is old and well known in the oil drilling and exploration arts to utilize common and basic machinery and structural layouts during the process of oil production. In the competitive business climate, there is a profit-driven motive to maximize the profitability of goods and services that are provided or marketed to customers. Enterprises typically use business planning to make decisions in order to maximize profits. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine/modify the method of **BELADY/GLEIFCHAUF** with the technique of utilizing a skids, trailers, generators, turbines, cargo containers and engines because there is a recognized problem or need in the art including market pressure, design need, etc., and there are a finite number of identified predictable solutions. Consequently, those in the art could have pursued known solutions with reasonable expectation of success. (*KSR v. Teleflex*, 127 S. Ct. 1727 (2007)).

Claim 32:

The combination of **BELADY/GLEIFCHAUF** discloses the limitations as shown in the rejections above. **BELADY/GLEIFCHAUF** does not specifically disclose *prior to using the source of combustible gas, the combustion engine is under loaded as the prime mover, and further comprising connecting the generator to a power takeoff connected to the combustion engine.* However, the Examiner takes **OFFICIAL NOTICE** that it is old and well known in the oil drilling and exploration arts to utilize common and basic machinery and structural layouts during the process of oil production. In the competitive business climate, there is a profit-driven motive to maximize the profitability of goods and services that are provided or marketed to customers. Enterprises typically use business planning to make decisions in order to maximize profits. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine/modify the method of **BELADY/GLEIFCHAUF** with the technique of connecting underloaded devices to combustion engine PTO's because there is a recognized problem or need in the art including market pressure, design need, etc., and there are a finite number of identified predictable solutions. Consequently, those in the art could have pursued known solutions with reasonable expectation of success. (*KSR v. Teleflex*, 127 S. Ct. 1727 (2007)).

Examiner's Note – Electronic Communications

The U.S. Patent & Trademark Office's (USPTO) policy regarding communications between examiners and Applicant s via the internet is set forth in MPEP 502.03:

"Without a written authorization by Applicant in place, the USPTO will not respond via Internet e-mail to any Internet correspondence which contains information subject to the confidentiality requirement as set forth in 35 U.S.C. 122... Where a written authorization is given by the Applicant, communications via Internet e-mail...may be used. In such case, a printed copy of the Internet email communications MUST be ... entered in the patent application file."

In addition, Article 8 of the Patent Internet Usage Policy (which is reproduced in MPEP §502.03, subsection V) states in part:

"Internet e-mail shall NOT be used to conduct an exchange of communications similar to those exchanged during telephone or personal interviews unless a written authorization has been given under Patent Internet Usage Policy Article 5 to use Internet e-mail. In such cases, a paper copy of the Internet e-mail contents MUST be made and placed in the patent application file...in the same manner as an Examiner Interview Summary Form is entered."

The Office has a policy of only communicating with the Applicant s by *email, calendar/scheduler applications, or video conferencing tools* with Applicant's informed consent. As noted in Article 6 of the Patent Internet Usage Policy, "[t]he misrepresentation of a sender's identity (i.e., spoofing) is a known risk when using electronic communications. Therefore, Patent Organization users have an obligation to be aware of this risk and conduct their Internet activities in compliance with established procedures." Office employees are not permitted to communicate with Applicant s regarding a patent application via Internet e-mail unless there is written authorization by the Applicant s in the application file. **Applicant is encouraged to submit form PTO/SB/439 to accommodate email correspondence.**

CONCLUSION

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Non Patent Literature:

- **YOUTUBE**. "Using Natural Gas To Mine Bitcoin With Matthew Lohstroh." (18 September 2019). Retrieved online 04/16/2022. https://www.youtube.com/watch?v=TYpsZzlevow
- **WayBack Machine**. "New Century Exploration." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220401000000*/https://www.newcenturyexp.com/
- **WayBack Machine**. "New Century Exploration – What We Do." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220330234542/https://www.newcenturyexp.com/
- **YOUTUBE**. "Why is natural gas flared? What is the solution?" (23 July 2015). Retrieved online 04/17/2022. https://www.youtube.com/watch?v=4_vEUnlOAs8

Foreign Art:

- **HANKE TIMO TOBIAS et al.** "BLOCK MINING METHODS AND APPARATUS." (WO 2015/077378 A1)
- **TAYLOR NINA**. "This New Monetary Innovation Method/process Using Crypto Currency Applies To And For Entities, Which Require An Income/revenue Producing Asset Using Any Form Of Named/renamed Crypto Currency, Using Any Form Of Blockchain/chain Process Using The Wallet Which Mints/Mines New Coin Assets." ((AU 2014/101324 A4)
- **TERRY GARY MCALISTER.** "New Stock/share/bond Innovation Using Principle Mined Cryptographic Currency/digital Mining Assets/commodities Which Secondary Mine For Stock/share/bond Holders On/using The Blockchain/any Chain/shared Ledger On A Cryptographic Currency/digital Mining Assets/commodities Exchange." (AU 2016/100178 A4)
- **MCALISTER GARY.** "Blockchain Digital Mining Asset/Commodity Innovation For Private Placement, High Yield Investment, Tier 1,2,3, MTN Buy/sell Structured Financial Trading Programs And Platforms." (AU 2016/100394 A4)

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **James A. Reagan** (james.reagan@uspto.gov) whose telephone number is **571.272.6710.** The Examiner can normally be reached Monday through Friday from 10 AM to 6 PM. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **KAMBIZ ABDI** can be reached at **571.272.6702**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://portal.uspto.gov/external/portal/pair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

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/JAMES A REAGAN/
Primary Examiner, Art Unit 3688

james.reagan@uspto.gov
571.272.6710 (Office)
571.273.6710 (Desktop Fax)

Examiner-Initiated Interview Summary	**Application No.** 16/484,728	**Applicant(s)** Barbour, Stephen		
	Examiner JAMES A REAGAN	**Art Unit** 3688	**AIA (First Inventor to File) Status** Yes	**Page** 1 of 2

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
JAMES A REAGAN	Primary Examiner	Telephonic
Robbie Nissen	Attorney of Record	

Date of Interview: 15 April 2022

Issues Discussed:

Other

The Examiner held a conference with the Applicant's representative to gain insight and a better understand the claimed invention as well as the oil/natural gas industry as it applies to block chain mining. The discussion involved references that although do not necessarily qualify as prior art, describe the inventive intent. Discussed claim language and construction, such as markush-type claims, industry terms given their standard and reasonable definitions, and use claims (MPEP 2173.05(q) - claim 24). The Examiner considered requiring a restriction against claims 24-41, but will wait until the Applicant has an opportunity to amend. An initial search revealed little in the way of qualified prior art, but did reveal BELADY (USPGP 2014/0096837 A1). Also discussed the third party submission which the Examiner concluded reads adequately on the independent claims. Moving forward, the Examiner suggests drafting independent claims that clearly unite the combustible gas production elements and the block chain mining elements. Allowable subject may reside in dependent claims 12-18, but further searching is required. Applicants representative supplied further relevant references. No agreements were reached. The Applicant's representative is invited to interview with the Examiner after the receipt of the next Office action.

☑ Attachment

/JAMES A REAGAN/ Primary Examiner, Art Unit 3688	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete

and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Notice of References Cited	Application/Control No. 16/484,728	Applicant(s)/Patent Under Reexamination Barbour, Stephen	
	Examiner JAMES A REAGAN	Art Unit 3688	Page 1 of 4

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*	B	US-20180181153-A1	06-2018	TAKAHASHI; Hirotaka	G05F1/66	1/1
*	C	US-20190018394-A1	01-2019	Sayyarrodsari; Bijan	G06Q10/0833	1/1
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*	F	US-20190122132-A1	04-2019	RIMINI; Noa	G06N7/005	1/1
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*	H	US-20170207629-A1	07-2017	SEKI; Akira	G05B15/02	1/1
*	I	US-20180284707-A1	10-2018	Menon; Anup	F02C9/28	1/1
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	O	WO-2015077378-A1	05-2015	WO	HANKE T	G06Q20/0655
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	U	• YOUTUBE. "Using Natural Gas To Mine Bitcoin With Matthew Lohstroh." (18 September 2019). Retrieved online 04/16/2022. https://www.youtube.com/watch?v=TYpsZzlevow (Year: 2019)
	V	• WayBack Machine. "New Century Exploration." (2022). Retrieved online 04/16/2022. https://web.archive.org/web/20220401000000*/https://www.newcenturyexp.com/ (Year: 2022)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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Notice of References Cited	Application/Control No. 16/484,728	Applicant(s)/Patent Under Reexamination Barbour, Stephen	
	Examiner JAMES A REAGAN	Art Unit 3688	Page 2 of 4

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*	C	US-20170243290-A1	08-2017	Brown; Michael Sean	G06Q30/0202	1/1
*	D	US-9630614-B1	04-2017	Hill; William McGinley	F02B63/047	1/1
*	E	US-20150316903-A1	11-2015	Asmus; Matthew J.	G06Q10/06	700/291
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*	G	US-20150012622-A1	01-2015	Omatsu; Fumio	G06Q10/10	709/220
*	H	US-20120185414-A1	07-2012	Pyle; Richard	G01W1/10	706/11
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*	J	US-20130138468-A1	05-2013	OE; Ryuji	G06Q50/06	705/7.22
*	K	US-20100332272-A1	12-2010	Ong; Jiun Keat	F03D17/00	705/7.36
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	Examiner JAMES A REAGAN	Art Unit 3688	Page 3 of 4

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*	C	US-20140096837-A1	04-2014	Belady; Christian L.	F16L55/0333	138/26
*	D	US-8849469-B2	09-2014	Belady; Christian L.	G06Q30/04	700/297
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*	F	US-20190306176-A1	10-2019	Gleichauf; Paul Harry	H04W12/10	1/1
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*	H	US-7525207-B2	04-2009	Clidaras; Jimmy	F03B13/20	290/43
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	16/484,728	Barbour, Stephen
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	JAMES A REAGAN	3688

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US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16484728
Filing Date	2019-08-08
First Named Inventor	Stephen Barbour
Art Unit	
Examiner Name	
Attorney Docket Number	91A-3US

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	3	8483715		2013-07-09	Chen	
	4	9495668		2016-11-15	Juels	

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	1	20150261269		2017-06-13	Bruscoe	
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	Attorney Docket Number	91A-3US

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	First Named Inventor	Stephen Barbour
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Examiner Signature	/JAMES A REAGAN/ (04/16/2022)	Date Considered	04/16/2022

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/RobertNissen#64256/	Date (YYYY-MM-DD)	2020-02-05
Name/Print	Robert A. Nissen	Registration Number	64256

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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BLOCK MINING METHODS AND APPARATUS

DOCUMENT ID	DATE PUBLISHED
WO-2015077378-A1	2015-05-28

INVENTOR INFORMATION

NAME	CITY	STATE	ZIP CODE	COUNTRY
HANKE TIMO TOBIAS	N/A	N/A	N/A	US
LERNER SERGIO DEMIAN	N/A	N/A	N/A	AR

DATE FILED
2014-11-19

FOREIGN APPLICATION PRIORITY DATA

COUNTRY	APPLICATION NO	APPLICATION DATE
US	US201361906310P	

CPC CURRENT

TYPE	CPC	DATE
CPCI	G06Q20/0658	2013-01-01
CPCI	G06Q20/0655	2013-01-01
CPCI	H04L9/3239	2013-01-01
CPCI	G06Q20/3827	2013-01-01
CPCI	H04L9/0643	2013-01-01
CPCA	H04L2209/56	2013-01-01
CPCA	G06Q2220/00	2013-01-01
CPCA	H04L2209/38	2013-01-01

Abstract

Block chain mining methods and apparatus. A mid- state generator develops a plurality, n, of mid-states by selectively varying a portion of the block, and, in particular, the block header. A single message expander develops a message schedule by expanding a message in accordance with a predetermined expansion function; and the message schedule is shared with a plurality, n, of compressors, each developing a result as a function of the message schedule and a respective one of the n unique mid-states in accordance with a predetermined compression function. The compressors can be either rolled core or pipelined core.

New stock/share/bond innovation using principle mined cryptographic currency/digital mining assets/commodities which secondary mine for stock/share/bond holders on/using the Blockchain/any chain/shared ledger on a cryptographic currency/digital mining assets/commodities exchange.

DOCUMENT ID
AU-2016100178-A4

DATE PUBLISHED
2016-03-24

INVENTOR INFORMATION

NAME	CITY	STATE	ZIP CODE	COUNTRY
TERRY GARY MCALISTER	N/A	N/A	N/A	N/A

DATE FILED
2016-02-17

FOREIGN APPLICATION PRIORITY DATA

COUNTRY	APPLICATION NO	APPLICATION DATE
AU	AU2016100178A	

Abstract

Abstract: The invention concerns cryptographic currency/digital mining assets/ commodities for use in the stock/share/bond market industry. More specifically the present invention relates to the provision of cryptographic currency/digital mining assets/commodity stock/share/ bond innovation which fundamentally changes how the stocks/shares/ bonds are discovered, issued, valuated and rated. This is an innovation that addresses what the stocks/shares/bonds now known as digital mining assets/commodities look like and how they are bought, sold and traded on a digital mining assets/ commodities Blockchain exchange. It affects proof of ownership on the Blockchain, investor returns, earnings to shareholders, settlement speed and company strength etc. This innovation is a new stocks/shares/bonds structure using digital mining assets/commodities which are the actual stocks/shares/bonds in the start-ups, businesses, companys and corporations which can then be bought/sold/traded on a new Blockchain shared ledger exchange/platform. New start-ups and existing businesses/companies/ corporations can transition from their old stocks/shares/bonds structure in the existing stocks/shares/bonds market over to this new innovative digital mining assets/commodities stocks/shares/bonds structure on a new digital mining assets/commodities Blockchain exchange. This innovation makes it possible for investors/stakeholders to acquire principle digital mining asset/commodity in a start-up, business/company/corporation in both the primary and secondary market and let their principle digital mining asset/commodity secondary mine for them on exchange and/or off exchange. This is then a new innovative way for investors/stakeholders who would now be shareholders in this new structure to get a stable return on investment without having to sell their principle stocks/ shares/bonds back into the market place. They can simply sell what their start-up/business/company/corporation principle digital mining assets/commodities stocks/shares/bonds secondary mine. This innovation has the potential to completely reshape the industry and drive huge improvements in market efficiency, settlement, security, regulatory, speed of transfer, ownership CIS, KYC, AML. We will use Bankcoin as our example of the digital mining assets/ commodities which has had its

principle Bankcoin mined and is now secondary mining a percentage from 1% onwards pa from the total amount in their Bankcoin digital wallet. Example: if you acquire 1000 Bankcoins it will secondary mine up to 10% pa which equals up to 100 newly mined Bankcoins pa. So when an investor/stakeholder acquires 1000 digital mining asset/commodity stocks/shares/bonds in a start-up/business/company/corporation from the SharesX exchange for example, they will newly secondary mine 100 digital mining This digital mining asset/commodity stocks/shares/bonds innovation assists with market stability being a fixed price with the option of a floating price above that, transparency as the Blockchain is decentralised, security of ownership as investors/shareholders have full control over their digital mining asset/commodity stocks/ shares/bonds both online and offline in their own digital wallet, and minimising tax avoidance by increased transparency and regulatory oversight. Gary McAlister Terry

This new monetary innovation method/process using crypto currency applies to and for entities, which require an income/revenue producing asset using any form of named/renamed crypto currency, using any form of blockchain/chain process using the wallet which mints/mines new coin assets.

DOCUMENT ID
AU-2014101324-A4

DATE PUBLISHED
2014-12-04

INVENTOR INFORMATION

NAME	CITY	STATE	ZIP CODE	COUNTRY
TAYLOR NINA	N/A	N/A	N/A	N/A

DATE FILED
2014-11-03

FOREIGN APPLICATION PRIORITY DATA

COUNTRY	APPLICATION NO	APPLICATION DATE
AU	AU2014101324A	

Abstract

This method/process using crypto currency applies to and for entities, which require an income/revenue producing asset using any form of named/renamed crypto currency, using any form of blockchain/chain process using the wallet which mints/mines new coin assets. This new method/process makes it possible for an entity to acquire a (blockchain or any chain dependent) crypto currency asset to earn revenue, mint and mine new assets and currency, produce, acquire income for that entity and or on behalf of another entity.

From:	Robbie Nissen
To:	Reagan, James
Subject:	Re: U.S patent application no.: 16484728, NPL 91A-3US
Date:	Friday, April 15, 2022 2:35:46 PM
Attachments:	91A-3US_IDS_April_22.pdf efilingAck45486121.pdf NPL11.pdf efilingAck45486188.pdf sb0439.pdf

Dear Examiner Reagan,

U.S patent application no.: 16484728
Filed: February 6, 2018
Inventor: Stephen Barbour
NPL file: 91A-3US

As per our discussion I attach copies of the IDS and NPL document efiled today, as well as a copy of an authorization to communicate by email form.

Regards,

Robbie Nissen
Agent of Record
Lawyer, Patent and Trade-mark Agent, B.Sc.
Nissen Patent Law

P: 780-802-7904, F: 888-744-4480
#200, 10328 - 81 Avenue, Edmonton, AB, T6E 1X2
nissenlaw.ca

Doc Code:IDS.3P
Document Description: Third-Party Submission Under 37 CFR 1.290

PTO/SB/429(08-12)
Approved for use through 07/31/2015. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

THIRD-PARTY SUBMISSION UNDER 37 CFR 1.290	Application Number	16484728

U.S. PATENTS				
Cite No	Patent Number	Kind Code[1]	Issue Date (YYYY-MM-DD)	First Named Inventor

U.S. PATENT APPLICATION PUBLICATIONS				
Cite No	Publication Number	Kind Code[1]	Publication Date (YYYY-MM-DD)	First Named Inventor

FOREIGN PATENTS AND PUBLISHED FOREIGN PATENT APPLICATIONS						
Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[1]	Publication Date (YYYY-MM-DD)	Applicant, Patentee or First Named Inventor	T[5]
						☐

NON-PATENT PUBLICATIONS (e.g., journal article, Office action)			
Cite No	Author (if any), title of the publication, page(s) being submitted, publication date, publisher (where available), place of publication (where available).	T[5]	E[6]

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THIRD-PARTY SUBMISSION UNDER 37 CFR 1.290	Application Number	16484728

1	Reddit posting, dated July 3, 2016. https://www.reddit.com/r/Bitcoin/comments/4r2bjm/mining_with_free_natural_gas/	☐	☒

STATEMENTS

The party making the submission is not an individual who has a duty to disclose information with respect to the above-identified application under 37 CFR 1.56.

This submission complies with the requirements of 35 U.S.C. 122(e) and 37 CFR 1.290.

☐ The fee set forth in 37 CFR 1.290(f) has been submitted herewith.

☐ The fee set forth in 37 CFR 1.290(f) is not required because this submission lists three or fewer total items and, to the knowledge of the person signing the statement after making reasonable inquiry, this submission is the first and the only submission under 35 U.S.C 122(e) filed in the above-identified application by the party making the submission or by a party in privity with the party.

☒ This resubmission is being made responsive to a notification of non-compliance issued for an earlier filed third-party submission. The corrections in this resubmission are limited to addressing the non-compliance. As such, the party making this resubmission: (1) requests that the Office apply the previously-paid fee set forth in 37 CFR 1.290(f), or (2) states that no fee is required to accompany this resubmission as the undersigned is again making the fee exemption statement set forth in 37 CFR 1.290(g).

Signature	/Oliver Strimpel/		
Name/Print	Oliver Strimpel	Registration Number (if applicable)	56451

Examiner Signature	/JAMES A REAGAN/ (04/16/2022)	Date Considered	04/16/2022

*EXAMINER: Signature indicates all documents listed above have been considered,except for citations through which a line is drawn. Draw line through citation if not considered. Include a copy of this form with next communication to applicant. 1. If known, enter kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16. See MPEP 901.04(a). 2. Enter the country or patent office that issued the document, by two-letter code under WIPO standard ST.3. See MPEP 1851. 3. For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 4. If known, enter the kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 . See MPEP 901.04(a). 5. Check mark indicates translation attached. 6. Check mark indicates evidence of publication attached.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16484728
Filing Date	2018-02-06
First Named Inventor	Stephen Barbour
Art Unit	
Examiner Name	
Attorney Docket Number	91A-3US

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9967333		2018-05-08	Dell Products LP	
	2	8305757		2012-11-06	Innertech IP LP	
	3	8254124		2012-08-28	Keisling et al.	
	4	8297067		2012-10-30	Keisling et al.	
	5	8601827		2013-12-10	Keisling et al.	
	6	9282684		2016-03-08	Keisling et al.	
	7	9763366		2017-09-12	Keisling et al.	

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	Application Number	16484728
	Filing Date	2018-02-06
	First Named Inventor	Stephen Barbour
	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20080135238		2008-06-12	Cugnet, et al.	
	2	20200107475		2020-04-02	Keisling et al.	

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	1	Office Action issued on corresponding Canadian patent application 3090944, January 28, 2022, 3 pages.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16484728
	Filing Date	2018-02-06
	First Named Inventor	Stephen Barbour
	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16484728
	Filing Date	2018-02-06
	First Named Inventor	Stephen Barbour
	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/RobertNissen#64256/	Date (YYYY-MM-DD)	2022-04-15
Name/Print	Robert A. Nissen	Registration Number	64256

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Patents (bitcoin blockchain mining oil field natural gas flare waste) before:pri

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System and Method for Oil and Condensate Processing

US · US20180274347A1 · Joseph A. Riotto · KATA Systems LLC
Priority 2014-05-20 · Filed 2018-05-25 · Published 2018-09-27
A system and method for the on-site separating and treating of a hydrocarbon liquid stream at an oil and gas production site is disclosed. The system comprises an oil and condensate distillation unit and a vapor recovery unit. In one embodiment, the oil and condensate distillation unit operates at ...

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Published 2016
... Although Norris only mentions this art studio's **gas** leak in ... unit for comparison or a common **field** within which to arrange ... with the stronger odours of linseed **oil** and sour, stale French ...

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Published 2012
... that what I did with it was **natural** but forbidden, did not sit well ... My father would pick up his **gas** mask and a black steel ... It was, we later learned, an air mine that, following the **flare**, had ...

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... we look out and we see the **natural** world and we know what it is ... Although we **field**-check trips every few years, conditions ... alarms); the common highway **flare** used by motorists has also ...

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Published 2014
... Armor thins to solar **flare** seething purple burst Thirst, fugitive morsel drifting violet lagoon Barnacle me, my ... mutually hollow trading a sudden **flare** from solar cavities slowly merging ...

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... Lantern is temporarily rendered powerless by the **gas** fumes from canisters being ... **oil** on those deboarding the plane. Senator Jeremiah Clutcher's face is covered with the thick, black **oil**. ...

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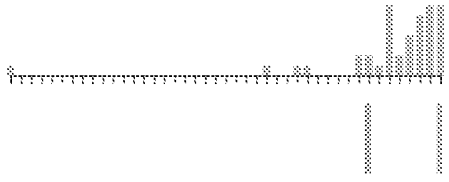

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US · US20180274347A1 · Joseph A. Riotto · KATA Systems LLC
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Priority 1993-07-27 - Filed 1995-01-26 - Granted 1997-07-11 - Published 1997-07-11
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... that have been shuffled off the **field**, thus turning our literary ... holes in the ground, like **garbage**? When we have looked on in ... When the horse died of **natural** causes Oleg taunted the ...

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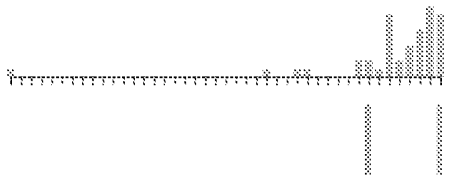

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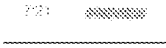

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An **oil** well pad near Sidney is pictured in June 2021. The structures at right contain a **Bitcoin mining** operation powered by excess **natural gas** produced as a result of **oil** extraction on the site.

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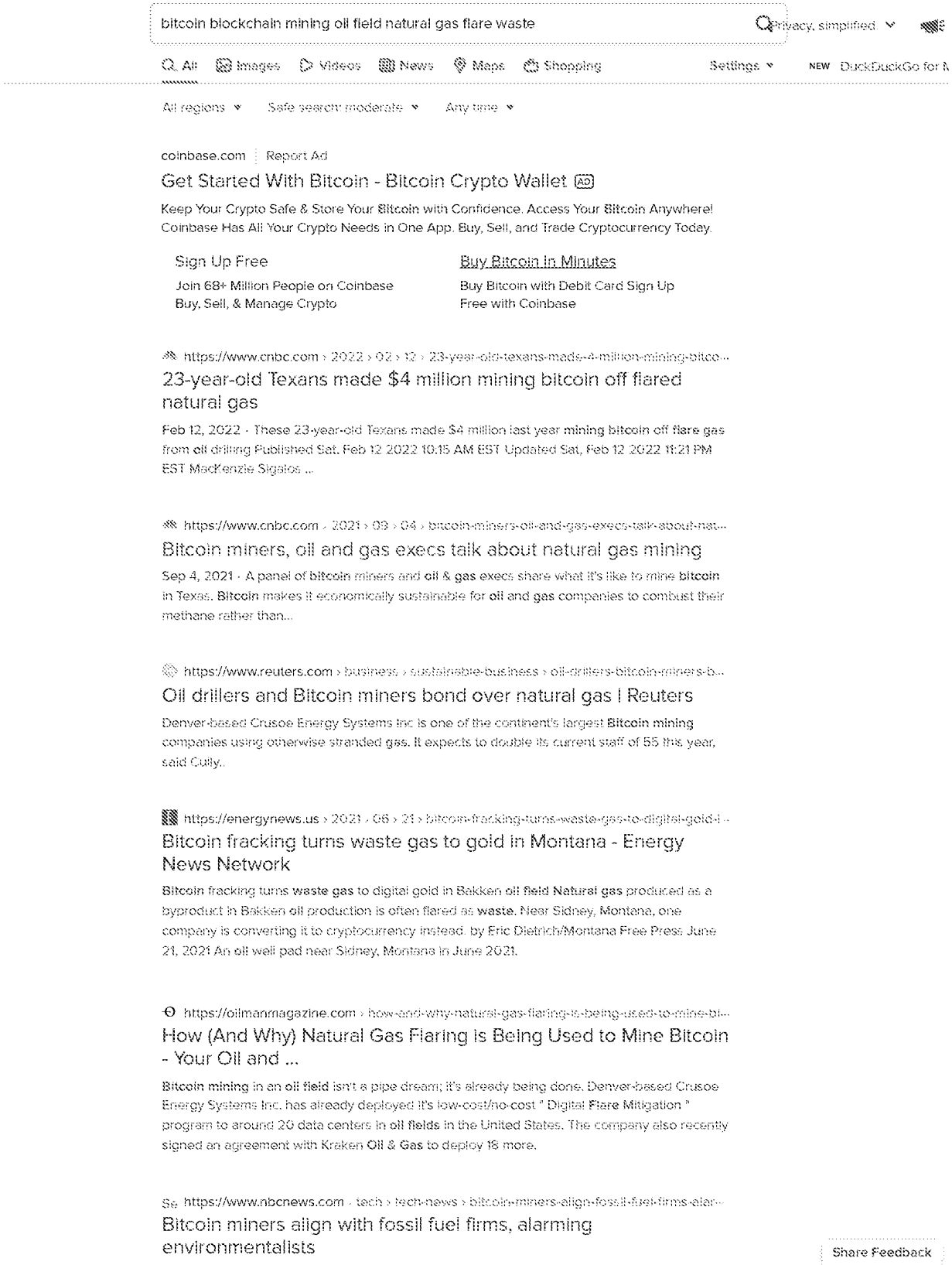
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Oil field miners operate near or at well heads where **oil** or **natural gas** liquids are produced and dry **natural gas** is generated as a **waste** product. This **natural gas** cannot be econom- ically brought to market and is therefore either vented or flared.

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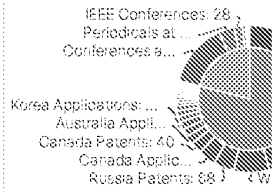

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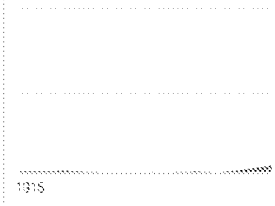

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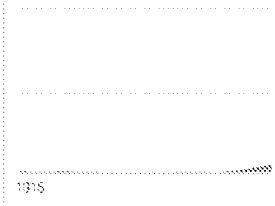

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L20	1	19 AND (blockchain OR block$chain OR "block chain") AND oil AND "natural gas" AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:07 AM
L21	17	19 AND (blockchain OR block$chain OR "block chain") AND min$3	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:08 AM
L22	1	19 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:11 AM
L23	4	("2020/0040272").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:11 AM
L24	128	("5142672" | "5367669" | "5913046" | "6288456" | "6633823" | "7143300" | "7376851" | "7647516" | "7702931" | "7779276" | "7861102" | "7921315" | "7970561" | "8001403" | "8006108" | "8214843" | "8260913" | "8374928" | "8447993" | "8571820" | "8627123" | "8639392" | "8700929" | "8706915" | "8719223" | "8789061" | "8799690" | "9003211" | "9003216" | "9026814" | "9027024" | "9143392" | "9207993" | "9218035"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:11 AM

		| "9282022" | "9542231" | "9552234" | "9645596" | "9994118" | "10367353" | "10367535" | "10444818" | "10452127" | "10452532" | "10497072" | "10608433" | "10618427" | "10637353" | "20020072868" | "20020158749" | "20030023885" | "20030037150" | "20030074464" | "20040117330" | "20050203761" | "20060161765" | "20080030078" | "20080094797" | "20090055665" | "20090070611" | "20090078401" | "20090089595" | "20090216910" | "20100211810" | "20100235004" | "20100280675" | "20100328849" | "20110072289" | "20110238342" | "20110239010" | "20120000121" | "20120072745" | "20120300524" | "20120306271" | "20120324259" | "20130006401" | "20130063991" | "20130086404" | "20130117621" | "20130187464" | "20130227139" | "20130304903" | "20130306276" | "20140070756" | "20140137468" | "20140180886" | "20140379156" | "20150012113" | "20150121113" | "20150155712" | "20150212122" | "20150229227" | "20150277410" | "20150278968" |					

		"20150288183" | "20150372538" | "20160006066" | "20160011617" | "20160043552" | "20160126783" | "20160170469" | "20160172900" | "20160187906" | "20160198656" | "20160212954" | "20160248631" | "20160324077" | "20170023969" | "20170104336" | "20170261949" | "20170373500" | "20180026478" | "20180144414" | "20180202825" | "20180240112" | "20180366978" | "20180367320" | "20190052094" | "20190168630" | "20190258307" | "20190280521" | "20190318327" | "20190324820" | "20200040272" | "20200051184" | "20200073466" | "20200136387" | "20200136388").pn. OR ("11163280").urpn. AND (PGPB | USPT | USOC).dbnm.					
L25	9	24 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:12 AM
L26	65	("6288456" | "6633823" | "7143300" | "7647516" | "7702931" | "7779276" | "7861102" | "7921315" | "7970561" | "8001403" | "8006108" | "8214843" | "8374928" | "8447993" | "8571820" | "8627123" | "8789061" | "8799690" | "9003211" | "9003216" | "9026814" | "9207993" | "9218035" | "9552234" | "20080030078" | "20080094797" | "20090055665" | "20100211810" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2022/04/16 09:12 AM

		"20100328849" | "20110238342" | "20120000121" | "20120072745" | "20120300524" | "20130006401" | "20130063991" | "20130086404" | "20130187464" | "20130306276" | "20140137468" | "20140379156" | "20150155712" | "20150229227" | "20160198656" | "20160212954" | "20160324077" | "20170104336" | "20180144414").pn. OR ("10367353").urpn. AND (PGPB | USPT | USOC).dbnm.					
L27	18	26 AND (blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:12 AM
L28	2615	(blockchain OR block$chain OR "block chain") AND (oil OR "natural gas")	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:13 AM
L29	156	28 AND (blockchain OR block$chain OR "block chain") AND ((oil OR "natural gas") SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:13 AM
L30	0	28 AND (blockchain OR block$chain OR "block chain") AND ((oil OR "natural gas") SAME generator SAME server SAME mining)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:14 AM
L31	5	28 AND ((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND ((oil OR "natural gas") SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:14 AM
L32	36	28 AND ((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND ((oil OR "natural gas"))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:15 AM
L33	22	28 AND ((blockchain OR block$chain OR "block chain") SAME	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:16 AM

		server SAME mining) AND (generator)					
L34	121	((blockchain OR block$chain OR "block chain") SAME server SAME mining) AND (generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:16 AM
L35	1024	((blockchain OR block$chain OR "block chain") SAME mining) AND (generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:19 AM
L36	42	((blockchain OR block$chain OR "block chain") SAME mining) AND (generator WITH gas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:19 AM
L37	439	((blockchain OR block$chain OR "block chain" OR "distributed ledger") SAME mining SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:22 AM
L38	6	37 AND (server SAME electric$4 SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:22 AM
L39	8	37 AND (server SAME (electric$4 OR power) SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:24 AM
L40	176	37 AND (server SAME (electric$4 OR power))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:25 AM
L41	717	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME mining SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:26 AM
L42	9	41 AND (server SAME electric$4 SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:27 AM
L43	3	"9982516"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:27 AM
L44	2	"20150337218"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:28 AM
L45	107	41 AND (vented OR flared OR wast$4) AND (natural OR methane OR gas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:34 AM
L46	9	41 AND (server SAME electric$4 SAME power SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:37 AM
L47	4507	((blockchain OR	(US-PGPUB; USPAT;	OR	ON	ON	2022/04/16

		block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME mining)	EPO; JPO)				09:38 AM
L48	17	47 AND (server SAME electric$4 SAME power SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 09:38 AM
L49	4765	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:05 AM
L50	17	49 AND (server SAME electric$4 SAME power SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L51	39	49 AND ((computer OR server) SAME electric$4 SAME power SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L52	156	49 AND ((computer OR server) SAME (electric$4 OR power) SAME (generator OR genereation))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 10:06 AM
L53	738	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining) SAME server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:24 AM
L54	10	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining) SAME server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:24 AM

L55	339	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:25 AM
L56	952	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:27 AM
L57	98	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) SAME (server SAME generator)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:27 AM
L58	85	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME (power WITH generator))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:28 AM
L59	39	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:30 AM

		cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME (electric$4 WITH generator))					
L60	33	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) AND (server SAME ((portable OR mobile) WITH generator))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:31 AM
L61	4045	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) SAME (mine OR mining OR verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:31 AM
L62	1936	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining OR verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:32 AM
L63	58	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining) SAME (verify OR verification OR verifying)) WITH (server)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 11:32 AM

L64	97	"7525207"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L65	2	"20140096837"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L66	3	"8683823"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:34 PM
L67	4	"9100089"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:35 PM
L68	1	"20150321739"	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:35 PM
L69	156	49 AND ((computer OR server) SAME (electric$4 OR power) SAME (generator OR generetion))	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:39 PM
L70	102	69 AND ("natural gas", OR methane OR flare OR burn$3 OR waste biogas)	(US-PGPUB; USPAT; EPO; JPO)	OR	ON	ON	2022/04/16 02:42 PM
L71	1	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) WITH (mine OR mining) SAME (verify OR verification OR verifying)) WITH (server)	(EPO; JPO)	OR	ON	ON	2022/04/16 02:42 PM
L72	1	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining) (verify OR verification OR verifying)) (server)	(EPO; JPO)	SAME	ON	ON	2022/04/16 02:43 PM
L73	13	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)	(EPO; JPO)	SAME	ON	ON	2022/04/16 02:43 PM
L74	14	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR	(EPO; JPO)	AND	ON	ON	2022/04/16 02:44 PM

		cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)					
L75	892	(blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining)	(FPRS; EPO; JPO)	AND	ON	ON	2022/04/16 02:44 PM
L76	23	((blockchain OR block$chain OR "block chain" OR "distributed ledger" OR crypto OR cryptocurrency OR crypto$currency OR crypto$coin OR cryptocoin) (mine OR mining) (verify OR verification OR verifying)) (server)	(FPRS; EPO; JPO)	SAME	ON	ON	2022/04/16 02:44 PM

PE2E SEARCH - Search History (Interference)

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1 Making Crimes?: Technology, Law, and DIY Firearms Tallman, Mark A., ProQuest Dissertations and Theses ProQuest Dissertations Publishing, (2017) KWIC

Found in: ProQuest Dissertations and Theses Professional

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1 Making Crimes?: Technology, Law, and DIY Firearms Tallman, Mark A., ProQuest Dissertations and Theses ProQuest Dissertations Publishing, (2017) KWIC

Found in: ProQuest Dissertations and Theses Professional

Blockchain Digital Mining Asset/Commodity innovation for Private Placement, High Yield Investment, Tier 1,2,3, MTN buy/sell Structured financial Trading Programs and Platforms.

DOCUMENT ID	DATE PUBLISHED
AU-2016100394-A4	2016-05-19

INVENTOR INFORMATION

NAME	CITY	STATE	ZIP CODE	COUNTRY
MCALISTER GARY	N/A	N/A	N/A	N/A

DATE FILED
2016-04-11

FOREIGN APPLICATION PRIORITY DATA

COUNTRY	APPLICATION NO	APPLICATION DATE
AU	AU2016100394A	

Abstract

Abstract: This innovation is fundamental in bringing these programs and platforms into the digital mining asset/commodity Blockchain replacing the fiat/cash component that is required to start a typical program. Digital mining assets/commodities with the option of having the Blockchain digital mining wallets installed at the top 50 banks and/or at the Bankcoin Reserve with the new digital mining commodities using Blockchain technology. We will use Bankcoin as the digital mining asset/commodity throughout this innovation filing (it could be any digital mining commodity) as we have already tested it to make sure this innovation can be duplicated and replicated by those who want to exploit it via a license agreement. We will also use the Bankcoin Reserve throughout this process as it is the number 1 Top AAA Rated Digital mining asset/commodity entity/authority able to facilitate between client and trader, block the use of the clients Bankcoins from the client as a requirement of the trader, allow trader access via a remote desktop connection application where traders can go through all aspects of the digital mining asset/commodity digital Bankcoin wallet and monitor its mining and balance in real time, and store/secure the clients digital mining assets/commodities in their digital wallet for the term of the agreement with the broker.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	16484728
Filing Date	2018-02-06
First Named Inventor	Stephen Barbour
Art Unit	
Examiner Name	
Attorney Docket Number	91A-3US

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	1	20170280594		2017-09-28	Sato	
	2	20120300391		2012-11-21	Kiesling	
	3	20120077427		2012-03-29	Wei	
	4	20160128238		2016-05-05	Shedd	
	5	20120300291		2012-11-29	Abbott	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16484728
	Filing Date	2018-02-06
	First Named Inventor	Stephen Barbour
	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

	6	20200040272		2020-02-06	Cavness			

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	BITMAIN, Antminer T9+, accessed 2019-04-24 but available as early as 2018-02-03, 3 pages, Screenshots taken from Wayback machine Internet archive, URL=https://web.archive.org/web/20180217221522/http://shop.bitmain.com/productDetail.htm?pid=00020180130130212850 6gKIcpoR06AA	
	2	SEA-CAN CONTAINERS LTD, Shipping Containers, accessed 2020-01-17 but available as early as 2018-07-03, 3 pages, Screenshots taken from Wayback machine Internet archive, URL=https://web.archive.org/web/20180703184711/http://seacan.com/shipping-containers/.	

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EXAMINER SIGNATURE

Examiner Signature	/JAMES A REAGAN/ (04/16/2022)	Date Considered	04/16/2022

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.A.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16484728
	Filing Date	2018-02-06
	First Named Inventor	Stephen Barbour
	Art Unit	
	Examiner Name	
	Attorney Docket Number	91A-3US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/RobertNissen#64256/	Date (YYYY-MM-DD)	2021-05-13
Name/Print	Robert A. Nissen	Registration Number	64256

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Filing Date	2018-02-06
First Named Inventor	Stephen Barbour
Art Unit	
Examiner Name	
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	3	8254124		2012-08-28	Keisling et al.	
	4	8297067		2012-10-30	Keisling et al.	
	5	8601827		2013-12-10	Keisling et al.	
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