



US011574372B2

(12) **United States Patent**  
**Barbour**

(10) **Patent No.:** **US 11,574,372 B2**  
(45) **Date of Patent:** **Feb. 7, 2023**

(54) **BLOCKCHAIN MINE AT OIL OR GAS FACILITY**

(58) **Field of Classification Search**  
None

(71) Applicant: **Upstream Data Inc.**, Lloydminster (CA)

See application file for complete search history.

(72) Inventor: **Stephen Barbour**, Lloydminster (CA)

(56) **References Cited**

(73) Assignee: **Upstream Data Inc.**, Lloydminster (CA)

U.S. PATENT DOCUMENTS

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 729 days.

5,142,672 A 8/1992 Johnson  
5,367,669 A 11/1994 Holland  
(Continued)

(21) Appl. No.: **16/484,728**

FOREIGN PATENT DOCUMENTS  
AU 2009203009 A1 2/2010  
AU 2014101324 A4 \* 12/2014  
(Continued)

(22) PCT Filed: **Feb. 6, 2018**

(86) PCT No.: **PCT/CA2018/050135**

§ 371 (c)(1),

(2) Date: **Jan. 6, 2020**

OTHER PUBLICATIONS

(87) PCT Pub. No.: **WO2018/145201**

PCT Pub. Date: **Aug. 16, 2018**

Youtube. "Using Natural Gas to Mine Bitcoin With Matthew Lohstroh." (Sep. 18, 2019). Retrieved online Apr. 16, 2022. <https://www.youtube.com/watch?v=TYpsZzlevow> (Year: 2019).\*  
(Continued)

(65) **Prior Publication Data**

US 2020/0051184 A1 Feb. 13, 2020

**Related U.S. Application Data**

*Primary Examiner* — James A Reagan

(74) *Attorney, Agent, or Firm* — Robert A. Nissen

(60) Provisional application No. 62/456,380, filed on Feb. 8, 2017.

(51) **Int. Cl.**

**G06Q 30/00** (2012.01)

**G06Q 50/06** (2012.01)

(Continued)

(57) **ABSTRACT**

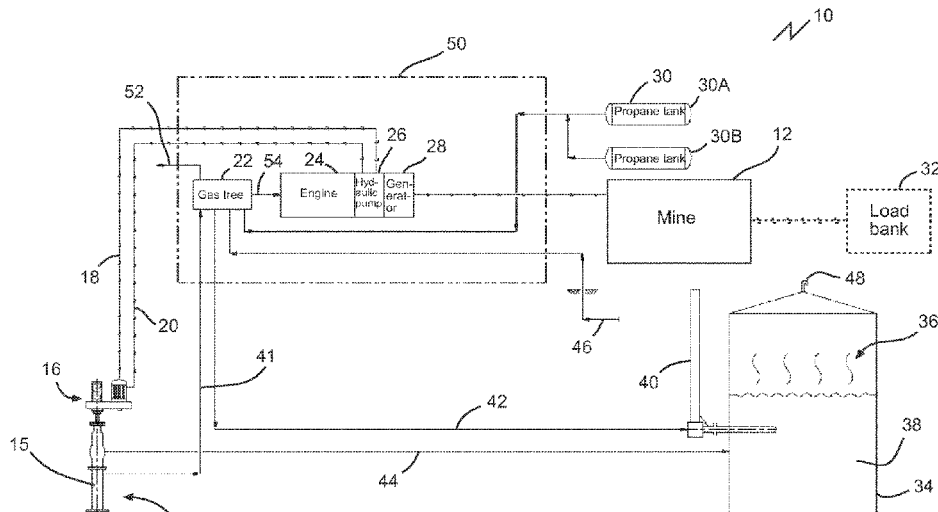
Methods and systems of operating a blockchain mining device using natural gas produced at a hydrocarbon production, storage, or processing site/facility. A generator may be retrofitted to an existing prime mover used to pump the blockchain mining device. Portable mining devices may be hooked up to a casinghead gas supply at a remote, isolated oil facility. Power loading levels may be modulated by adjusting mining transaction levels to correspond with combustible gas production levels.

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

CPC ..... **G06Q 50/06** (2013.01); **E21B 41/00** (2013.01); **F02M 21/0209** (2013.01);

(Continued)

**41 Claims, 6 Drawing Sheets**



(51)	<b>Int. Cl.</b>			8,094,436 B2	1/2012	Mills	
	<b>G06F 16/23</b>	(2019.01)		8,113,010 B2	2/2012	Carlson	
	<b>E21B 41/00</b>	(2006.01)		8,156,206 B2	4/2012	Kiley et al.	
	<b>F02M 21/02</b>	(2006.01)		8,180,501 B2	5/2012	Lewis	
	<b>G05B 15/02</b>	(2006.01)		8,184,435 B2	5/2012	Bean	
	<b>G06Q 10/06</b>	(2012.01)		8,203,837 B2	6/2012	Zeighami	
	<b>H04L 67/104</b>	(2022.01)		8,203,841 B2	6/2012	Chang	
	<b>H04L 67/1097</b>	(2022.01)		8,214,843 B2	7/2012	Boss	
	<b>H02J 9/06</b>	(2006.01)		8,233,270 B2	7/2012	Pierson	
(52)	<b>U.S. Cl.</b>			8,248,795 B2	8/2012	Chang	
	CPC .....	<b>F02M 21/0218</b> (2013.01); <b>G05B 15/02</b>		8,248,799 B2	8/2012	Chang	
		(2013.01); <b>G06F 16/2315</b> (2019.01); <b>G06Q</b>		8,250,382 B2	8/2012	Maglione	
		<b>10/06313</b> (2013.01); <b>H04L 67/104</b> (2013.01);		8,251,785 B2	8/2012	Schmitt	
		<b>H04L 67/1097</b> (2013.01); <b>G06Q 2220/00</b>		8,254,122 B2	8/2012	Chang	
		(2013.01); <b>H02J 9/06</b> (2013.01)		8,254,124 B2	8/2012	Keisling et al.	
				8,260,913 B2	9/2012	Knapp	
				8,261,275 B2	9/2012	Johnson	
				8,264,840 B2	9/2012	Bergthold	
				8,286,442 B2	10/2012	Carlson	
				8,297,067 B2	10/2012	Keisling et al.	
(56)	<b>References Cited</b>			8,300,402 B2	10/2012	Wei	
	<b>U.S. PATENT DOCUMENTS</b>			8,305,737 B2	11/2012	Ewing	
				8,305,757 B2	11/2012	Keisling et al.	
				8,312,229 B2	11/2012	Bloks	
				8,315,054 B2	11/2012	Chen	
				8,320,128 B2	11/2012	Wei	
				8,322,155 B2	12/2012	Tutunoglu	
				8,331,086 B1	12/2012	Meissner	
				8,331,087 B2	12/2012	Wei	
				8,332,670 B2	12/2012	Kato	
				8,360,833 B2	1/2013	Grantham	
				8,370,517 B2	2/2013	Bohrer	
				8,374,928 B2	2/2013	Gopisetty	
				8,405,977 B2	3/2013	Lin	
				8,422,223 B2	4/2013	Su	
				8,432,700 B2	4/2013	Katakura	
				8,447,993 B2	5/2013	Greene	
				8,457,796 B2	6/2013	Thind	
				8,462,496 B2	6/2013	Schmitt	
				8,483,715 B2	7/2013	Chen	
				8,498,110 B2	7/2013	Wei	
				8,498,114 B2	7/2013	Martini	
				8,600,556 B2	12/2013	Nesler	
				8,601,827 B2	12/2013	Keisling et al.	
				8,627,123 B2	1/2014	Jain	
				8,639,392 B2	1/2014	Chassin	
				8,659,895 B1	2/2014	Carlson	
				8,665,591 B2	3/2014	Bourgeois	
				8,683,823 B1 *	4/2014	Shivers, III	F25J 1/0283 114/230.17
				8,694,810 B2	4/2014	Ahluwalia	
				8,700,929 B1	4/2014	Weber	
				8,706,914 B2	4/2014	Duchesneau	
				8,706,915 B2	4/2014	Duchesneau	
				8,719,223 B2	5/2014	Knapp	
				8,734,212 B2	5/2014	Peng	
				8,755,184 B2	6/2014	Peng	
				8,768,799 B1	7/2014	Forbes	
				8,789,061 B2	7/2014	Pavel	
				8,799,690 B2	8/2014	Dawson	
				8,812,674 B2	8/2014	Guenther	
				8,839,254 B2	9/2014	Horvitz	
				8,848,727 B2	9/2014	Saraiya	
				8,849,469 B2 *	9/2014	Belady	G06Q 30/04 700/297
				8,849,715 B2	9/2014	Forbes	
				8,887,498 B2	11/2014	Frerichs	
				8,917,502 B1	12/2014	Gardner	
				8,924,781 B2	12/2014	Shaw	
				8,931,221 B2	1/2015	Somani	
				8,941,256 B1	1/2015	Czamara	
				8,964,374 B1	2/2015	Sheng	
				8,965,594 B2	2/2015	Marcus	
				9,003,211 B2	4/2015	Pfeiffer	
				9,003,216 B2	4/2015	Sankar	
				9,026,814 B2	5/2015	Aasheim	
				9,027,024 B2	5/2015	Mick	

(56)

References Cited

U.S. PATENT DOCUMENTS

9,063,738 B2	6/2015	Jain	10,033,210 B2	7/2018	Peterson
9,065,582 B2	6/2015	Barry	10,037,061 B1	7/2018	Panchapakesan
9,072,200 B2	6/2015	Dersch	10,039,211 B2	7/2018	Crawford
9,089,078 B2*	7/2015	Branton ..... H05K 7/20263	10,063,629 B2	8/2018	Duncan
9,091,496 B2	7/2015	Imwalle	10,067,547 B2	9/2018	Castro-Leon
9,110,641 B2	8/2015	Wu	10,078,353 B2	9/2018	Klaba
9,124,099 B2	9/2015	Kuriyama	10,103,574 B2	10/2018	Siegler
9,141,155 B2	9/2015	Wiley	10,128,684 B2	11/2018	Ramamurthy
9,144,181 B2	9/2015	Wiley	10,199,669 B2	2/2019	Wang
9,155,230 B2*	10/2015	Eriksen ..... H05K 7/20781	10,234,835 B2	3/2019	Liu
9,207,993 B2	12/2015	Jain	10,257,268 B2	4/2019	Cencini
9,218,035 B2	12/2015	Li	10,271,486 B2	4/2019	McNamara
9,232,024 B2	1/2016	Suffling	10,275,842 B2	4/2019	Lee
9,252,598 B2	2/2016	Belady	10,283,968 B2	5/2019	ElBsat
9,268,613 B2	2/2016	Barham	10,289,190 B2	5/2019	Boss
9,271,429 B2	2/2016	Mashiko	10,291,627 B2*	5/2019	Gleichauf ..... H04W 12/06
9,282,022 B2	3/2016	Matthews	10,326,661 B2	6/2019	Munjal
9,282,684 B2	3/2016	Keisling et al.	10,339,227 B1	7/2019	Carlson
9,284,850 B1	3/2016	Gardner	10,340,696 B2	7/2019	Paine
9,320,177 B2	4/2016	Levesque	10,356,954 B2	7/2019	Bao
9,337,704 B1	5/2016	Leslie	10,367,353 B1*	7/2019	McNamara ..... G06F 1/3206
9,342,375 B2	5/2016	Hyser	10,368,467 B2	7/2019	Gold
9,345,167 B2	5/2016	Hwang	10,404,523 B2	9/2019	Cencini
9,348,381 B2	5/2016	Khoo	10,452,532 B2	10/2019	McVay
9,357,681 B2	5/2016	Ross	10,454,772 B2	10/2019	White
9,365,127 B2	6/2016	Olsson	10,465,492 B2	11/2019	Ricotta
9,380,734 B2	6/2016	Chang	10,488,061 B2	11/2019	Costakis
9,389,632 B2	7/2016	Km	10,497,072 B2	12/2019	Hooshmand
9,395,208 B2	7/2016	Sobotka	10,523,449 B2	12/2019	Montalvo
9,414,531 B1	8/2016	Towner	10,582,635 B1	3/2020	Ross
9,416,904 B2	8/2016	Belady	10,637,250 B2	4/2020	Paine
9,444,367 B2	9/2016	Fornage	10,637,353 B2	4/2020	Ohyama
9,447,992 B2	9/2016	Johnson	10,721,240 B2*	7/2020	Gleichauf ..... H04L 67/1097
9,450,838 B2	9/2016	Jain	10,739,042 B2	8/2020	Zhang
9,493,216 B2*	11/2016	Scott ..... F17C 9/00	10,754,494 B2	8/2020	Duncan
9,495,668 B1	11/2016	Juels	10,833,940 B2	11/2020	Cencini
9,497,892 B2	11/2016	Klaba	10,882,412 B2	1/2021	Mrlík
9,542,231 B2	1/2017	Khan	10,916,967 B2	2/2021	Peloso
9,552,234 B2	1/2017	Boldyrev	10,931,117 B2	2/2021	Shoemaker
9,559,520 B2	1/2017	Shelton	10,974,194 B2	4/2021	Al Muhsen
9,568,975 B2	2/2017	Sehgal	10,993,353 B2	4/2021	Rau
9,585,291 B2	2/2017	Belady	11,009,836 B2	5/2021	Hoffmann
9,588,558 B2	3/2017	McKnight	11,056,913 B2	7/2021	Matan
9,595,054 B2	3/2017	Jain	11,076,509 B2	7/2021	Alissa
9,606,571 B2	3/2017	Shows	11,126,242 B2	9/2021	Shaikh
9,618,991 B1	4/2017	Clidasaras	11,163,280 B2*	11/2021	Henson ..... A01G 9/26
9,622,387 B1	4/2017	Czamara	11,182,781 B2	11/2021	Castinado
9,630,614 B1*	4/2017	Hill ..... F02B 63/047	11,196,255 B2	12/2021	Torvund
9,634,508 B2	4/2017	Kearns	11,310,944 B2	4/2022	Martini
9,637,433 B2	5/2017	Zubrin	2002/0120412 A1*	8/2002	Hayashi ..... H02J 3/00 702/61
9,645,596 B1	5/2017	Lee	2003/0196798 A1	10/2003	Newman
9,654,414 B2	5/2017	Chatterjee	2004/0000815 A1	1/2004	Pereira
9,673,632 B1	6/2017	Ramesh	2004/0239499 A1	12/2004	Crook
9,692,259 B2	6/2017	Boss	2005/0034128 A1	2/2005	Nagashima
9,719,024 B2	8/2017	Young	2005/0179263 A1	8/2005	Johansen et al.
9,763,366 B2	9/2017	Keisling et al.	2008/0135238 A1*	6/2008	Cugnet ..... E21B 41/005 166/256
9,769,948 B2	9/2017	Welch	2008/0276628 A1	11/2008	Lee
9,769,953 B2	9/2017	Malone	2009/0070611 A1	3/2009	Bower
9,769,960 B2	9/2017	LeFebvre	2009/0078401 A1	3/2009	Cichanowicz
9,774,190 B2	9/2017	Mondal	2009/0107671 A1	4/2009	Waters et al.
9,778,718 B2	10/2017	Zacho	2009/0255653 A1	10/2009	Mills
9,795,062 B1	10/2017	Ross	2010/0024445 A1	2/2010	Cichanowicz
9,800,052 B2	10/2017	Li	2010/0038907 A1	2/2010	Hunt et al.
9,800,167 B2	10/2017	Aeloiza	2010/0130117 A1	5/2010	Larsen
9,839,163 B2	12/2017	Keisling	2010/0280675 A1	11/2010	Tate
9,886,316 B2	2/2018	Belady	2010/0319747 A1*	12/2010	Wong ..... H01L 35/30 136/201
9,933,804 B2	4/2018	Janous	2010/0332272 A1*	12/2010	Ong ..... F03D 17/00 705/7.36
9,939,834 B2	4/2018	Bodas	2011/0009047 A1	1/2011	Noteboom
9,967,333 B2	5/2018	Chen et al.	2011/0099043 A1	4/2011	Sharma
9,982,516 B2*	5/2018	Ricotta ..... C10G 7/02	2011/0189936 A1	8/2011	Haspers
9,985,842 B2	5/2018	White	2011/0199862 A1	8/2011	Pop
9,994,118 B2	6/2018	Williams	2011/0276194 A1	11/2011	Emalfarb
9,995,218 B2	6/2018	Oehring	2011/0278928 A1	11/2011	Burger

(56)

References Cited

U.S. PATENT DOCUMENTS

2012/0077427 A1 3/2012 Wei  
 2012/0108157 A1 5/2012 Chan  
 2012/0129442 A1 5/2012 Wei  
 2012/0132554 A1 5/2012 Wei  
 2012/0134105 A1 5/2012 Chang  
 2012/0142265 A1 6/2012 Wei  
 2012/0185414 A1\* 7/2012 Pyle ..... G01W 1/10  
 706/11  
 2012/0244793 A1 9/2012 Lin  
 2012/0300291 A1 11/2012 Abbott  
 2012/0300391 A1 11/2012 Kiesling  
 2012/0323382 A1 12/2012 Kamel  
 2013/0002443 A1 1/2013 Breed et al.  
 2013/0006401 A1 1/2013 Shan  
 2013/0054987 A1 2/2013 Pfeiffer  
 2013/0065669 A1 3/2013 Michaelson et al.  
 2013/0078901 A1 3/2013 Curtin  
 2013/0112419 A1 5/2013 DeFosse et al.  
 2013/0138468 A1\* 5/2013 Oe ..... G06Q 50/06  
 705/7.22  
 2013/0166455 A1 6/2013 Feigelson  
 2013/0199629 A1 8/2013 Hemsley  
 2013/0245947 A1 9/2013 Samsom et al.  
 2013/0328395 A1 12/2013 Krizman  
 2014/0016256 A1 1/2014 Lin  
 2014/0036442 A1 2/2014 Giannoglou  
 2014/0096837 A1\* 4/2014 Belady ..... F16L 55/0333  
 138/26  
 2014/0101462 A1 4/2014 Rose  
 2014/0137468 A1 5/2014 Ching  
 2014/0167504 A1 6/2014 Harris  
 2014/0185225 A1 7/2014 Wineland  
 2014/0237611 A1 8/2014 Dent  
 2014/0237614 A1 8/2014 Irvine  
 2014/0316984 A1 10/2014 Schwartz  
 2014/0324237 A1\* 10/2014 Oe ..... G06Q 40/00  
 700/287  
 2014/0332088 A1 11/2014 Senesh  
 2014/0366577 A1 12/2014 Zubrin  
 2014/0379156 A1 12/2014 Kamel  
 2015/0012113 A1 1/2015 Celebi  
 2015/0012622 A1\* 1/2015 Omatsu ..... G06Q 10/10  
 709/220  
 2015/0167550 A1 6/2015 Vandervort  
 2015/0261269 A1 9/2015 Bruscoe  
 2015/0262139 A1 9/2015 Shtylman  
 2015/0276253 A1 10/2015 Montalvo  
 2015/0277410 A1 10/2015 Gupta  
 2015/0278968 A1 10/2015 Steven  
 2015/0288183 A1 10/2015 Villanueva  
 2015/0292303 A1 10/2015 Dusseault et al.  
 2015/0294308 A1 10/2015 Pauker et al.  
 2015/0310424 A1 10/2015 Myers  
 2015/0310476 A1 10/2015 Gadwa  
 2015/0316903 A1\* 11/2015 Asmus ..... G06Q 10/06  
 700/291  
 2015/0321739 A1\* 11/2015 Dehlsen ..... B63G 8/001  
 165/45  
 2015/0327406 A1 11/2015 Gallefoss  
 2015/0337218 A1\* 11/2015 Ricotta ..... C10G 53/02  
 208/187  
 2015/0356524 A1 12/2015 Pennanen  
 2015/0358943 A1 12/2015 Zawodniok et al.  
 2015/0369013 A1 12/2015 Weatherhead et al.  
 2016/0006066 A1 1/2016 Robertson  
 2016/0010445 A1 1/2016 Harrison et al.  
 2016/0011617 A1 1/2016 Liu  
 2016/0052814 A1 2/2016 Leyendecker et al.  
 2016/0109122 A1 4/2016 Malm et al.  
 2016/0112200 A1 4/2016 Kheterpal et al.  
 2016/0125040 A1 5/2016 Kheterpal et al.  
 2016/0128238 A1 5/2016 Shedd

2016/0218879 A1 7/2016 Ferrin  
 2016/0261404 A1 9/2016 Ford et al.  
 2016/0261685 A1\* 9/2016 Chen ..... H04W 12/35  
 2016/0283920 A1 9/2016 Fisher et al.  
 2016/0300234 A1 10/2016 Moss-Pultz et al.  
 2016/0319653 A1 11/2016 Reeves et al.  
 2016/0328713 A1 11/2016 Ebrahimi  
 2016/0330031 A1 11/2016 Drego et al.  
 2016/0330035 A1 11/2016 Ebrahimi et al.  
 2016/0342977 A1 11/2016 Lam  
 2016/0362954 A1 12/2016 Hansen et al.  
 2017/0027086 A1 1/2017 Noteboom  
 2017/0112023 A1 4/2017 Mao  
 2017/0169344 A1\* 6/2017 Mangharam ..... G06N 5/025  
 2017/0207629 A1\* 7/2017 Seki ..... G05B 15/02  
 2017/0243290 A1\* 8/2017 Brown ..... G06Q 30/0202  
 2017/0249606 A1\* 8/2017 Pirooz ..... G06Q 40/02  
 2017/0265326 A1 9/2017 Totani  
 2017/0271701 A1 9/2017 Berlowitz  
 2017/0280594 A1 9/2017 Sato  
 2017/0302077 A1\* 10/2017 Yabe ..... H02J 3/005  
 2017/0302171 A1\* 10/2017 Goto ..... G05B 15/02  
 2017/0329908 A1\* 11/2017 Braswell ..... G16H 40/20  
 2017/0349058 A1\* 12/2017 Bernier ..... H02J 3/14  
 2017/0352010 A1\* 12/2017 Son ..... G06Q 10/20  
 2017/0358041 A1\* 12/2017 Forbes, Jr. .... H02J 3/008  
 2017/0373500 A1 12/2017 Shafi  
 2018/0042064 A1\* 2/2018 Norton ..... H05B 47/20  
 2018/0109541 A1\* 4/2018 Gleichauf ..... H04W 12/06  
 2018/0116070 A1 4/2018 Broadbent  
 2018/0152023 A1\* 5/2018 Guruprasad ..... H02J 3/38  
 2018/0181153 A1\* 6/2018 Takahashi ..... G05F 1/66  
 2018/0202825 A1 7/2018 You  
 2018/0284707 A1\* 10/2018 Menon ..... F02C 9/28  
 2018/0351367 A1\* 12/2018 Kogo ..... G05B 19/042  
 2019/0018394 A1\* 1/2019 Sayyarodsari .... G06Q 10/0833  
 2019/0042990 A1\* 2/2019 Paul ..... G06Q 10/0637  
 2019/0063252 A1\* 2/2019 Spears ..... H05K 7/1498  
 2019/0122132 A1\* 4/2019 Rimini ..... G06N 7/005  
 2019/0267644 A1\* 8/2019 Berntsen ..... B60L 50/72  
 2019/0306176 A1\* 10/2019 Gleichauf ..... H04W 12/10  
 2020/0040272 A1 2/2020 Cavness  
 2020/0073466 A1\* 3/2020 Walsh ..... G06Q 20/127  
 2020/0107475 A1 4/2020 Keisling et al.  
 2020/0161865 A1\* 5/2020 Clifton ..... H02J 7/0068  
 2020/0167197 A1 5/2020 Bahramshahry  
 2020/0341439 A1\* 10/2020 Valin ..... H02S 40/44  
 2020/0359572 A1 11/2020 Henson  
 2020/0395761 A1\* 12/2020 Walsh ..... H02J 3/381  
 2021/0294287 A1\* 9/2021 Valin ..... G06Q 20/308

FOREIGN PATENT DOCUMENTS

AU 2016100178 A4 \* 3/2016  
 AU 2016100394 A4 \* 5/2016  
 CA 2332840 A1 11/1999  
 CA 2522428 A1 4/2007  
 CA 2653778 A1 12/2007  
 CA 2793537 A1 4/2011  
 CA 2758725 A1 5/2012  
 CA 2752594 A1 12/2012  
 CN 1656661 A 8/2005  
 CN 101803148 A 8/2010  
 CN 102185382 A 9/2011  
 CN 102541219 A 7/2012  
 CN 102591921 A 7/2012  
 CN 103327785 A 9/2013  
 CN 103443550 A 12/2013  
 CN 103562817 A 2/2014  
 CN 103748757 A 4/2014  
 CN 104144183 A 11/2014  
 CN 104969434 A 10/2015  
 CN 105451504 A 3/2016  
 CN 105814543 A 7/2016  
 CN 106659054 A 5/2017  
 CN 107257608 A 10/2017  
 CN 110083212 A 8/2019

(56)

## References Cited

## FOREIGN PATENT DOCUMENTS

EP	1167861	A1	1/2002	
EP	1490941	A1	12/2004	
EP	2036189	A2	3/2009	
EP	2074337	A2	7/2009	
EP	2354378	A1	8/2011	
EP	2446516	A2	5/2012	
EP	2634956	A2	9/2013	
EP	16153967		10/2016	
EP	2721710	B1	11/2017	
EP	3465865	A1	4/2019	
ES	2765100	T3	6/2020	
FR	2954670	A1	6/2011	
FR	2954671	A1	6/2011	
FR	2957163	A1	9/2011	
FR	2960662	A1	12/2011	
FR	2999819	A1	6/2014	
JP	2005056196	A	3/2005	
JP	3717420	B2	11/2005	
JP	2014518060	A	7/2014	
JP	5662877	B2	2/2015	
JP	2015528266	A	9/2015	
KR	20090012523	A	2/2009	
KR	100907946	B1	7/2009	
KR	20180084285	A	7/2018	
NL	2004277	C2	8/2011	
RU	2642422	C2	1/2018	
TW	201214093	A	4/2012	
WO	02/07365	A2	1/2002	
WO	2006/058341	A2	6/2006	
WO	2008/039773	A2	4/2008	
WO	2011/130406	A1	10/2011	
WO	2012/177769	A1	12/2012	
WO	2013/022501	A1	2/2013	
WO	2013/066602	A1	5/2013	
WO	2013/066604	A1	5/2013	
WO	2014/130972	A1	8/2014	
WO	2014/185311	A1	11/2014	
WO	2015077378		5/2015	
WO	WO-2015077378	A1 *	5/2015	..... G06Q 20/0655
WO	2015/175693	A1	11/2015	
WO	2015/199629	A1	12/2015	
WO	2016067295		5/2016	
WO	2016/106373	A1	6/2016	
WO	2016/145052	A1	9/2016	
WO	2017/074513	A1	5/2017	
WO	2017/214210	A1	12/2017	

## OTHER PUBLICATIONS

WayBack Machine. "New Century Exploration." (2022). Retrieved online Apr. 16, 2022. <https://web.archive.org/web/20220401000000/https://www.newcenturyexp.com/> (Year: 2022).\*

WayBack Machine. "New Century Exploration—What We Do." (2022). Retrieved online Apr. 16, 2022. <https://web.archive.org/web/20220330234542/https://www.newcenturyexp.com/> (Year: 2022).\*

Youtube. "Why is natural gas flared? What is the solution?" (Jul. 23, 2015). Retrieved online Apr. 17, 2022. [https://www.youtube.com/watch?v=4\\_vEUnIOAs8](https://www.youtube.com/watch?v=4_vEUnIOAs8) (Year: 2015).\*

Wiki, Mining, accessed Jan. 19, 2017, 4 pages, URL=<https://en.bitcoin.it/wiki/Mining>.

International Search Report issued on the corresponding PCT application No. PCT/CA2018/050135, 5 pages.

Wiki, Google Modular Data Center, accessed Oct. 5, 2019 but available at least as early as Feb. 8, 2017, 2 pages, URL=[https://en.wikipedia.org/wiki/Google\\_Modular\\_Data\\_Center](https://en.wikipedia.org/wiki/Google_Modular_Data_Center).

Bitfury, Block Box AC Mobile Datacenter, available at least as early as Feb. 8, 2017, 3 pages, screenshots taken from Wayback machine Internet archive, URL=<https://web.archive.org/web/20170130043612/http://bitfury.com/products#blockbox-ac>.

Wiki, Intermodal Container, accessed Oct. 5, 2019 but available at least as early as Feb. 8, 2017, 20 pages, URL=[https://en.wikipedia.org/wiki/Intermodal\\_container](https://en.wikipedia.org/wiki/Intermodal_container) 6/.

Wiki, Sun Modular Datacenter, accessed Oct. 5, 2019 but available at least as early as Feb. 8, 2017, 2 pages, URL=[https://en.wikipedia.org/wiki/Sun\\_Modular\\_Datacenter](https://en.wikipedia.org/wiki/Sun_Modular_Datacenter).

Office Action issued on corresponding Canadian patent application 3090944, dated Jan. 28, 2022, 3 pages.

Bitmain, Antminer T9+, accessed Apr. 24, 2019 but available as early as Feb. 3, 2018, 3 pages, Screenshots taken from Wayback machine Internet archive, URL=<https://web.archive.org/web/20180217221522/http://shop.bitmain.com/productDetail.htm?pid=000201801301302128506gKlcpoR06AA>.

Sea-Can Containers Ltd, Shipping Containers, accessed Jan. 17, 2020 but available as early as Jul. 3, 2018, 3 pages, Screenshots taken from Wayback machine Internet archive, URL=<https://web.archive.org/web/20180703184711/http://seacan.com/shipping-containers/>.

Theselfgoverned, Electricity Consumption: Bitcoin mining vs The current global financial system, Reddit, posted Jun. 5, 2014, 15 pages.

Mia Bennett, Blog—Bitcoin mining: The next rush to hit the Arctic?, posted Feb. 6, 2018, 14 pages.

Pymnts, China Moves to Squeeze Out Bitcoin Mining, posted Jan. 10, 2018, 7 pages.

Cryptocurrency investors eye provinces with low electricity rates, The Fraser Institute Blog, posted Jan. 31, 2018, 3 pages.

JCHI2210, Free natural gas, is it worth it to use a Natural gas generator?, Bitcoin Forum, posted Aug. 27, 2017, 7 pages.

Amanda Stephenson, Genalta Power earns carbon offsets for turning flare gas into electricity, Calgary Herald, posted Sep. 30, 2014, 6 pages.

Kenyn, Saving the environment through bitcoin; one transaction equals 117 recycled bottles, Reddit, posted Feb. 26, 2017, 17 pages.

Kinolva, Shower Thought: Mining Bitcoin for Heat / Hot Water?, Reddit, posted Jan. 28, 2017, 14 pages.

The Best Places in The World to Mine Bitcoin, PRNewswire, posted Jan. 18, 2018, 8 pages.

Reddit posting, dated Jul. 3, 2016. [https://www.reddit.com/r/Bitcoin/comments/4r2bjm/mining\\_with\\_free\\_natural\\_gas/](https://www.reddit.com/r/Bitcoin/comments/4r2bjm/mining_with_free_natural_gas/).†

\* cited by examiner

† cited by third party

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.