IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
DENVER DIVISION

UPSTREAM DATA INC.,	)	
	)	
Plaintiff,	)	
	)	
	)	
v.	)	**Civil Action No.**
	)	
	)	**JURY TRIAL DEMANDED**
CRUSOE ENERGY SYSTEMS LLC,	)	
	)	
Defendant.	)	

COMPLAINT

Plaintiff Upstream Data Inc. ("Plaintiff" or "Upstream"), by its attorneys, brings this action for damages and injunctive relief against Crusoe Energy Systems, LLC ("Defendant" or "Crusoe") for patent infringement. Upstream alleges, based on personal knowledge with respect to its own actions and upon information and belief with respect to all others' actions, as follows:

NATURE OF THE ACTION

1. This is a civil action against Crusoe for patent infringement under the patent laws of the United States, 35 U.S.C. § 1, *et seq*, of U.S. Patent No. 11,574,372 ("the '372 Patent"). A true and correct copy of the '372 Patent is attached hereto as Exhibit 1.

PARTIES

2. Plaintiff Upstream is a Canadian corporation with its principal place of business located at 4702 40 Ave., Lloydminster, Canada, S9V 2B6.

3. Defendant Crusoe is a Delaware limited liability company with its principal place of business located at 1641 California Street, Floor 4, Denver, Colorado 80202.

4. Crusoe makes, markets, sells, offers to sell, manufactures, distributes, and operates flare gas capture technology, e.g., Crusoe's so-called "Digital Flare Mitigation" or similar technology comprising cryptocurrency mining systems connected to sources of stranded natural gas in, at least, Colorado, North Dakota, and Texas. Further, Crusoe is registered to do business in Colorado and has infringed Upstream's '372 Patent in Colorado and in other states where it does business.

JURISDICTION AND VENUE

5. This Court has subject matter jurisdiction over Plaintiff Upstream's patent infringement claims pursuant to 28 U.S.C. §§ 1331 and 1338(a) because they arise under the laws of the United States, specifically those related to the infringement of U.S. Patents, 35 U.S.C. § 1, *et seq*.

6. This Court has specific and general personal jurisdiction over Crusoe at least because it makes and uses infringing products and methods in this judicial district and markets, distributes, offers for sale, uses, and/or sells infringing products and methods throughout the United States from this judicial district. This Court further has specific personal jurisdiction over Crusoe, because, as described herein, it purposefully avails itself, and enjoys the benefits, of the laws of Colorado, it has sufficient minimum contacts with the State of Colorado and this judicial district, this action arises out of these contacts, and exercising jurisdiction over Crusoe would be reasonable and comport with the requirements of due process. For example, Crusoe manufactures containerized modular cryptocurrency mining systems connected to sources of stranded natural gas, e.g., so-called "Digital Flare Mitigation" systems (hereinafter referred to as "Infringing Crusoe Products"), in this district. Moreover, Crusoe uses its facilities in this district to enter into contracts to install and operate Infringing Crusoe Products, as well as to actually

install, operate and service Infringing Crusoe Products. Crusoe has previously availed itself of this Court's jurisdiction by commencing patent litigation in this district, including through Crusoe's filing of a complaint against a customer of Upstream in *Crusoe Energy Systems LLC v. Alkane Midstream LLC*, DCO-1-22-cv-02142, and a copy of this complaint is attached as Exhibit 2. (Alkane Midstream LLC is hereinafter referred to as Alkane.) Crusoe's allegations within that complaint further confirm Crusoe's significant and substantial contacts with this district.

7. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 and 28 U.S.C. § 1400(b) at least because Crusoe has committed acts of infringement and has regular and established places of business in this district.

FACTUAL BACKGROUND

8. As detailed in the '372 Patent, many remote oil and gas sites are located in unpopulated areas that are hundreds of kilometers outside of the nearest towns. *See* Ex. 1 at col. 8:20-24. Such wells produce natural gas, including as a by-product of oil production at the well site. *See e.g.*, Ex. 1 at col. 6:34-54. Due to their remoteness, many natural gas-producing well sites cannot economically process and sell their gas; instead the gas is vented to the atmosphere or flared (burned) at the well site. *See e.g.*, Ex. 1 at col. 7:46-8:10. Either option is (1) wasteful and (2) harmful to the environment due to the release of greenhouse gasses such as methane and/or CO_2. *Id.* Gas that must be vented or flared because the remote production site lacks the infrastructure (e.g., a pipeline) to deliver it to a user is sometimes called "stranded gas."

9. The problem of stranded gas is vexing and pervasive. Vented methane is a powerful greenhouse gas that can be 80 times more potent at warming than carbon dioxide over a 20-year period as estimated by a recent United Nations report. *See* https://www.unep.org/news-and-stories/story/methane-emissions-are-driving-climate-change-heres-how-reduce-them. The

World Bank estimates that 139 billion cubic meters of natural gas is flared each year, enough gas to power the whole of sub-Saharan Africa. *See* https://www.worldbank.org/en/programs/gasflaringreduction/gas-flaring-explained. The flaring results in 350 million tons of CO_2 equivalent emissions annually. *Id.*

10. Stephen Barbour, the sole named inventor of the '372 patent and the founder of Upstream, set out to find a solution to provide well owners and operators with an incentive to stop the wasteful venting and flaring of stranded gas. Mr. Barbour realized that the gas could be effectively "un-stranded" by converting it at the well site to a digital currency such as Bitcoin.

11. As is well-known and described in the '372 Patent, generating a digital currency (also known as a cryptocurrency) such as Bitcoin is referred to as blockchain mining and involves energy-intensive computational efforts comprising running a cryptographic hashing algorithm on specialized mining processors. *See* Ex. 1 at col. 13:5-52, 17:9-22. Since the energy cost of running blockchain mining equipment is the primary operating cost, cryptocurrency miners traditionally congregate in locales with cheap electric power such as China. *See* Ex. 1 at col. 14:4-20. Such concentration is undesirable because it undermines the distributed and secure architecture of the cryptocurrency. *Id.* Of course, it is also costly because the energy consumed by blockchain mining could be put to other productive uses.

12. Mr. Barbour conceived of and reduced to practice a pioneering solution to the stranded gas problem which had the further benefit of allowing blockchain mining without costly energy consumption and undesirable concentration. This pioneering technology is described in the '372 patent which claims priority to a February 8, 2017 provisional application by Mr. Barbour.

13. By way of an illustration, Fig. 2 of the '372 patent shows an embodiment of Mr. Barbour's invention comprising a system for powering a blockchain mine at a remote oil well 14 where the well site is equipped with an engine 56 using stranded gas to drive a generator 28 powering a Bitcoin mine 12:

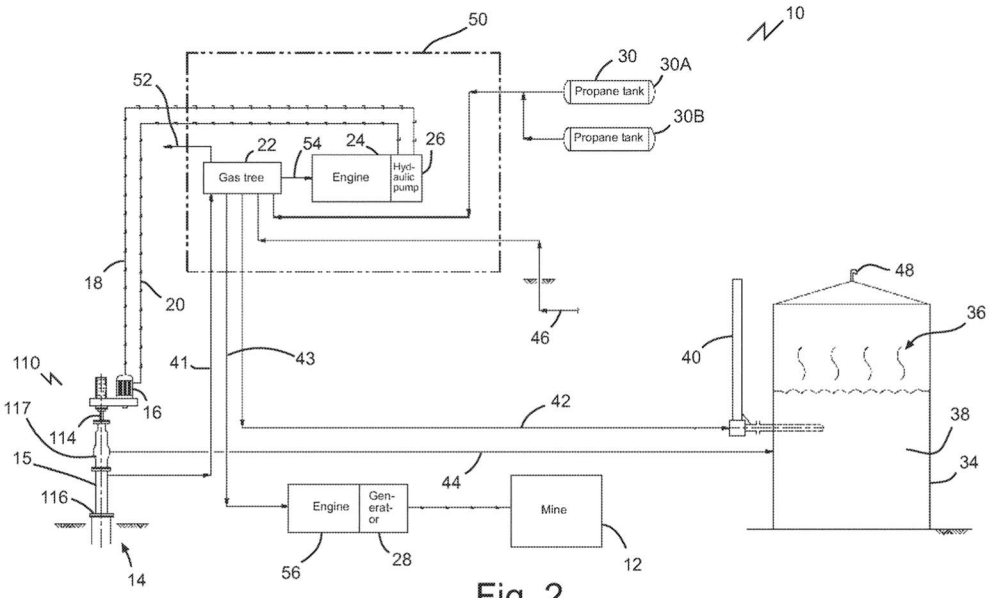


Fig. 2

14. Embodiments of the inventive stranded gas blockchain mining system are containerized or enclosed on a skid or trailer for ease of installation and maintenance at remote and difficult-to-access well sites as illustrated in Fig. 6. Exemplary components of a blockchain mine are illustrated in Fig. 4 and include multiple mining processors 92; cooling equipment such as ventilation fan 76; various electrical power distribution and transformation components; network equipment 88 to wirelessly connect the remote mine to the internet; and a controller 86 to manage and modulate mine operation automatically and in response to energy availability.

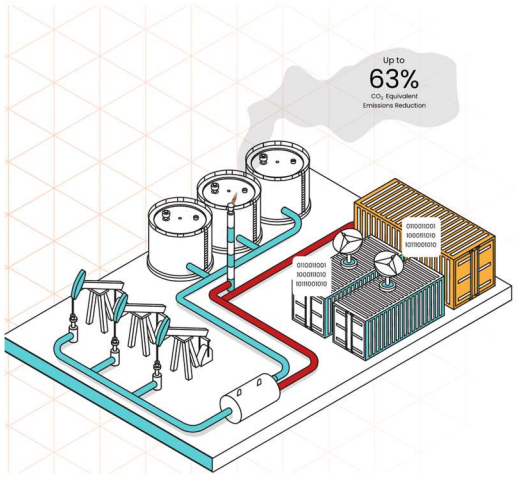
15. In 2017 Mr. Barbour founded Upstream to develop, manufacture and commercialize his breakthrough invention. To date Upstream has deployed over 350 Bitcoin mining systems at hundreds of remote well sites across U.S. and Canada thereby alleviating the

stranded gas venting and flaring problem. Mr. Barbour's patented technology is embodied in a number of Upstream's products such as the Ohmm Combo bitcoin mining system illustrated below:



16. Claims of the '372 patent are directed to a number of technological solutions invented by Mr. Barbour and practiced by Upstream's products.

17. Defendant Crusoe competes with Upstream by manufacturing, selling and operating cryptocurrency mining systems connected to sources of stranded gas. In particular, Crusoe sells and/or operates so-called "Digital Flare Mitigation" systems illustrated in the following figure from Crusoe's website at https://www.crusoeenergy.com/digital-flare-mitigation:



Crusoe's goal is to reduce the routine flaring of natural gas.

Crusoe provides oil and gas companies with a fast, low cost and simple solution to natural gas flaring. As the energy industry works to address infrastructure constraints and increasing environmental standards around flaring and emissions, Crusoe is here to help.

18. In prior litigation brought by Crusoe in this district, its complaint described Crusoe principals Charles Cavness and Chase Lochmiller as allegedly conceiving their so-called Digital Flare Mitigation technology in 2018. *See* Ex. 2 at ¶¶ 26-28. Crusoe described this technology as a "system, which harnesses stranded natural gas to create on-site power that supports intensive computing functions, such as Bitcoin mining." Ex. 2 at ¶ 27.

19. Whether in litigation, the press, social media, industry conferences or investor presentations, Crusoe describes itself and its Digital Flare Mitigation systems (comprising the Infringing Crusoe Products) as "pioneering" and "innovative." *See e.g.*, Ex. 2 at ¶ 29 and 30.

20. However, Crusoe developed the Infringing Crusoe Products years after Mr. Barbour conceived and reduced to practice the truly innovative technology claimed by the '372 patent and embodied in Upstream's products. Accordingly, Crusoe is a follower rather than a pioneer, and its Infringing Crusoe Products infringe one or more claims of the '372 patent as alleged herein.

21. On information and belief, at the time Crusoe was developing the Infringing Crusoe Products and through today, Crusoe was aware of Upstream and its patented technology.

For example, Crusoe maintains a company blog and a blog entry dated September 23, 2021 identified Upstream as a competitor. *See* https://www.crusoeenergy.com/blog/3MyNTKiT6wqsEWKhP0BeY/understanding-the-problem-crusoe-solves. Notably the Crusoe blog entry did not identify any technological differences between itself and Upstream, alluding only to alleged business model differences. As another example, claims in Crusoe's patent applications, e.g., U.S. Pat. App. No. 16/529,152, were rejected over Mr. Barbour's patent disclosure which was then publicly available as U.S. Pub. No. 2020/0051184.

22. Crusoe substantially narrowed the scope of its patent claims in response to the U.S. Patent Office's rejections. Nevertheless, Crusoe asserted its resulting patents against Upstream's customer Alkane, *see* Ex. 2, despite the fact that the alleged inventions are at best nominal and derivative implementations of fundamental technology first invented and patented by Mr. Barbour.

23. A typical business model used by Crusoe involves a gas purchase agreement wherein Crusoe installs, maintains and operates the Infringing Crusoe Products at a remote well site, paying the well owner for the methane gas used to power its so-called Digital Flare Mitigation Bitcoin mining systems. *See e.g.*, https://www.crusoeenergy.com/blog/3MyNTKiT6wqsEWKhP0BeY/understanding-the-problem-crusoe-solves.

24. The '372 Patent, entitled "Blockchain Mine at Oil or Gas Facility" was duly and legally issued by the United States Patent Office on February 7, 2023 from an application filed on February 6, 2018, naming Stephen Barbour as the inventor. The '372 Patent claims priority to U.S. Provisional Application No. 62/456,380, filed on February 8, 2017.

25. Upstream holds, by assignment, all right, title, and interest in and to the '372 Patent.

26. Pursuant to 35 U.S.C. § 282, the '372 Patent is presumed valid.

27. Pursuant to 35 U.S.C. § 287, Upstream has continuously marked its Bitcoin mining products with the '372 Patent since the '372 Patent issued on February 7, 2023.

COUNT I

Infringement of the '372 Patent

28. Upstream realleges and incorporates by reference the allegations of paragraphs 1 through 27 set forth above.

29. Crusoe has directly infringed and continues to infringe at least one claim of the '372 Patent by making, using, offering for sale, selling, and/or importing products, including at least the Infringing Crusoe Products, that meet every limitation, either literally or under the doctrine of equivalents, of at least claims 1-2 the '372 Patent, in violation of 35 U.S.C. § 271(a). Exemplary infringement of claims 1-2 of the '372 Patent by the Infringing Crusoe Products is demonstrated in the claim chart Exhibit 3. Exhibit 3 and any exhibits thereto, including embedded hyperlinks and references, are hereby incorporated in their entirety.

30. To the extent specific components of the Infringing Crusoe Products are provided and/or operated by Crusoe's customers, vendors or agents, Crusoe infringes at least claims 1-2 of the '372 Patent jointly with its customers, vendors, or agents. On information and belief, Crusoe directs and controls such infringing act(s) of one or more of these third parties by establishing the manner and timing of the one or more third parties' infringing act(s) and conditioning the participation of an activity or receipt of a benefit upon completion of the infringing act(s). Thus, Crusoe and the one or more third-parties jointly infringe the '372 Patent.

31. With knowledge of the ’372 Patent, Crusoe has actively induced, and continues to induce, its customers and/or end users of the Infringing Crusoe Products to directly infringe one or more claims of the ’372 Patent, including claims 1-2, in violation of 35 U.S.C. § 271(b).

32. Crusoe has induced such customers and/or end users to infringe by selling, aiding, providing support for, providing instructions for use of the Infringing Crusoe Products, and/or otherwise encouraging its customers and/or end-users to make, use, sell, or offer for sale the Infringing Crusoe Products to directly infringe, either literally and/or under the doctrine of equivalents, one or more claims of the ’372 Patent, including claims 1-2.

33. As a result of Crusoe’s inducement, its customers and/or end users operate and/or use the Infringing Crusoe Products, in ways that directly infringe at least one claim of the ’372 Patent. Crusoe had actual knowledge of its customers’ and/or end users’ direct infringement at least by virtue of its sales, instruction, and/or otherwise promotion of the Infringing Crusoe Products, as set forth above.

34. Crusoe has been and is continuing to contributorily infringe the ’372 patent in violation of 35 U.S.C. § 271(c), at least by making available to third parties such as its customers and/or end users substantially or fully complete Infringing Crusoe Products, knowing that such Infringing Crusoe Products are especially made or adapted for practicing one or more claims of the ’372 patent and that they are not a staple article or commodity of commerce suitable for substantial non-infringing use. Specifically, Crusoe has known and knows that the Infringing Crusoe Products installed at a remote well location directly infringe at least claims 1-2 of the ’372 patent as set forth herein.

35. Crusoe has actual knowledge of the ’372 patent at least as of the date of service of this Complaint. Moreover, Crusoe has actual and constructive notice of the ’372 patent and the application upon which the ‘372 patent is based at least in part on:

a. Upstream’s marking and marketing of its products with the ’372 patent or the application upon which the ’372 patent is based,

b. U.S. patent application publication no. 2020/0051184, which is the publication of the application upon which the ’372 patent is based,

c. P.C.T. patent application publication no. WO/2018/145201, which is the P.C.T. publication of the application upon which the ’372 patent is based, and/or

d. The date the application upon which the ’372 patent is based was first cited during prosecution of a U.S. patent application of Crusoe.

36. Because of Crusoe’s infringement of the ’372 Patent, Upstream has suffered and will continue to suffer irreparable harm and injury, including monetary damages in an amount to be determined at trial.

37. Crusoe will continue to infringe the ’372 Patent unless and until it is enjoined by this Court. As a result of Crusoe’s unlawful activities, Upstream has suffered and continues to suffer irreparable harm. Upstream has no adequate remedy at law against Crusoe’s acts of infringement and, unless Crusoe is enjoined from its infringement of the ’372 Patent, Upstream will continue to suffer irreparable harm.

38. Crusoe, with actual knowledge of the ’372 patent, willfully, deliberately, and intentionally infringed (and continues to infringe) the ’372 Patent. Accordingly, an award of treble damages and attorney’s fees is warranted at least under 35 U.S.C. §§ 284, 285.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Upstream respectfully prays for relief, as follows:

1) A judgment that Crusoe has directly and willfully infringed, actively induced infringement of, and/or contributorily infringed one or more claims of the '372 Patent in violation of 35 U.S.C. § 271(a), (b), and/or (c);
2) An order and judgment preliminarily and permanently enjoining Crusoe, its employees, agents, officers, directors, attorneys, successors, affiliates, subsidiaries and assigns, and all of those in active concert and participation with any of the foregoing persons or entities from further acts of infringement of the '372 Patent, including an order enjoining the marketing, making, manufacture, sale, offer for sale, use, and/or importation of all Crusoe products found to infringe;
3) A judgment awarding Upstream damages in an amount sufficient to compensate for Crusoe's infringement of the '372 Patent, and in no event less than a reasonable royalty for Crusoe's acts of infringement, including all pre-judgment and post-judgment interest at the maximum rate permitted by law, plus costs, and all other damages permitted under 35 U. S. C. § 284;
4) A judgment that Crusoe's infringement of the '372 Patent has been willful and deliberate;
5) A judgment awarding Upstream treble damages as a result of Crusoe's willful and deliberate infringement of the '372 Patent, pursuant to 35 U.S.C. § 284;
6) A judgment declaring this case is exceptional under 35 U.S.C. § 285 and awarding costs, expenses, and attorneys' fees to Upstream; and
7) Awarding Upstream such other further relief as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiff Upstream demands a trial by jury on all issues triable of right by a jury.

Dated: May 18, 2023

/s/ Jake Zolotorev
Jake Zolotorev
Carrie Williamson
DLA Piper
2000 University Avenue
East Palo Alto, CA 94303
Tel: 650.833.2000
Fax: 650.833.2001
Email: jake.zolotorev@us.dlapiper.com
Email: carrie.williamson@us.dlapiper.com

Clayton Thompson
DLA Piper
1201 West Peachtree Street
Suite 2900
Atlanta, Georgia 30309-3449
Tel: 404.736.7800
Fax: 404.682.7800
Email: clayton.thompson@us.dlapiper.com

Attorneys for Plaintiff
UPSTREAM DATA INC.