NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

CARDIONET, LLC, BRAEMAR MANUFACTURING, LLC,
Plaintiffs-Appellants

v.

INFOBIONIC, INC.,
Defendant-Appellee

2020-1018

Appeal from the United States District Court for the District of Massachusetts in No. 1:15-cv-11803-IT, Judge Indira Talwani.

Decided: July 1, 2020

CHING-LEE FUKUDA, Sidley Austin LLP, New York, NY, argued for plaintiffs-appellants. Also represented by BRADFORD J. BADKE, TODD MATTHEW SIMPSON; NATHAN A. GREENBLATT, Palo Alto, CA; RYAN C. MORRIS, Washington, DC.

MAXIMILIAN A. GRANT, Latham & Watkins LLP, Washington, DC, argued for defendant-appellee. Also

represented by GABRIEL BELL, DIANE GHRIST; CHRISTOPHER HENRY, CHARLES SANDERS, Boston, MA.

Before LOURIE, DYK, and CHEN, *Circuit Judges*.

LOURIE, *Circuit Judge*.

CardioNet, LLC and Braemar Manufacturing, LLC (collectively "CardioNet") appeal from a decision of the United States District Court for the District of Massachusetts holding that the asserted claims of U.S. Patents 7,212,850 ("'850 patent") and 7,907,996 ("'996 patent") are ineligible for patent under 35 U.S.C. § 101. *CardioNet, LLC v. InfoBionic, Inc.*, No. 1:15-cv-11803-IT, 2018 WL 1542051 (D. Mass. Mar. 29, 2018); *see also CardioNet, LLC v. InfoBionic, Inc.*, No. 1:15-cv-11803-IT, 2018 WL 1788650, at *7 (D. Mass. May 4, 2017). Because the district court did not err, we *affirm*.

BACKGROUND

The parties to this appeal are competitors in the field of mobile cardiac telemetry (MCT). MCT devices monitor the electrical activity of a patient's heart over an extended period of time, analyze the data for anomalies in the electrical activity, such as cardiac arrhythmias, and wirelessly transmit the data to a remote monitoring station for storage or further analysis. According to CardioNet, continuous monitoring of cardiac electrical signals generates an enormous amount of information—more than can practically be analyzed by a medical technician or physician in real-time. The '850 and '996 patents (collectively "the asserted patents") purport to address this problem by analyzing and displaying cardiac information relating to arrhythmia events and validating the accuracy of the information based on human review of only a small subset of the collected data.

The asserted patents, which derive from the same provisional application and share a substantially identical written description, describe systems and methods "for presenting information relating to heart data." '850 patent Abstract.[1] A "monitoring system" collects heart rate data and analyzes the data to identify arrhythmia events. *Id.* col. 3 ll. 8–16. A subset of the collected data is presented to a cardiovascular technician separately to identify arrhythmia events. *Id.* col. 3 ll. 18–22. A "processing system" then compares the events automatically identified by the monitoring system with the human identified events and, if enough of the human identified events match the automatically identified events, the system determines that the data are valid. *Id.* col. 4 ll. 52–56. If the data are determined to be valid, the processing system displays a graph that includes heart rate data as well as "atrial fibrillation burden," which refers to "the overall amount of time that a patient is in atrial fibrillation (or arrhythmia) over a specified time period." *Id.* col. 3 ll. 37–42. Figure 2 shows an example of such a graph:

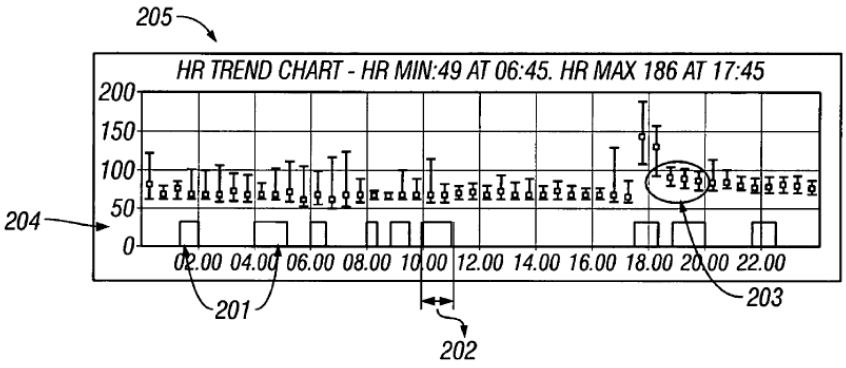

FIG. 2

[1] Because the '850 and '996 patents share a substantially identical written description, all citations are to the '850 patent unless specified otherwise.

According to the patents, by determining the validity of the automatically analyzed data based on a human assessment of only a subset of the data, "the system achieves increased accuracy in the presentation of information relating to arrhythmia events while minimizing the data that the [technician] reviews." *Id*. col. 4 ll. 61–64.

The district court treated claim 31 of the '850 patent and claim 12 of the '996 patent as representative of those asserted, and CardioNet does not challenge that determination on appeal. Claim 31 of the '850 patent recites:

> 31. A system for reporting information related to arrhythmia events comprising:
>
> a monitoring system configured to process and report physiological data, including heart rate data, for a living being and configured to identify arrhythmia events from the physiological data;
>
> a monitoring station for receiving the physiological data from the monitoring system;
>
> a processing system configured to receive arrhythmia information from the monitoring system and configured to receive human-assessed arrhythmia information from the monitoring station wherein the human-assessed arrhythmia information derives from at least a portion of the physiological data and wherein the processing system is capable of pictographically presenting, using a common time scale, information regarding the heart rate data during a defined time period and regarding duration of arrhythmia event activity, according to the identified arrhythmia events, during the defined time period such that heart rate trend is presented with arrhythmia event burden.

'850 patent col. 9 ll. 40–60.

Claim 12 of the '996 patent recites similar subject matter:

> 12. An article comprising a machine-readable medium embodying information indicative of instructions that when performed by one or more machines result in operations comprising:
>
> identifying atrial fibrillation events in physiological data obtained for a living being, wherein identifying atrial fibrillation events comprises examining the physiological data in multiple time intervals, and identifying intervals in which at least one atrial fibrillation event has occurred;
>
> obtaining heart rate data for the living being;
>
> receiving a human assessment of a subset of the identified atrial fibrillation events; and
>
> based on the human assessment of the subset of the identified atrial fibrillation events, pictographically presenting, using a common time scale, information regarding the heart rate data for the multiple time intervals during a defined time period in alignment with indications of atrial fibrillation activity for the identified intervals, according to the identified atrial fibrillation events, during the defined time period such that heart rate trend is presented with atrial fibrillation burden, wherein pictographically presenting information regarding the heart rate data comprises displaying for each of the multiple time intervals a range of heart rates and a heart rate average.

'996 patent col. 6 l. 53–col. 7 l. 11.

CardioNet asserted the '850 and '996 patents, as well as two other CardioNet patents not at issue in this appeal, against InfoBionic in the United States District Court for the District of Massachusetts. *See* Complaint & Jury

Demand, *CardioNet, LLC v. InfoBionic, Inc.*, No. 1:15-cv-11803-IT (D. Mass. May 8, 2015), ECF No. 1. InfoBionic moved for judgment on the pleadings that the asserted claims of the '850 and '996 patents are ineligible for patent under 35 U.S.C. § 101. The district court initially addressed claim 31 of the '850 patent and claim 12 of the '996 patent as the only claims specifically cited in CardioNet's complaint. The court considered the claims under the Supreme Court's two-step *Alice* framework for determining patent-eligibility. At step one, the court held that the claims are directed to the abstract idea of "correlating one set of data to another." *CardioNet*, 2018 WL 1788650, at *7. At step two, the court concluded that the claims do not include an inventive concept because they only implement the traditional practice in the medical field of seeking a second opinion using conventional hardware. *Id.* at 15–16. After soliciting additional briefing from the parties, the court determined that claim 31 of the '850 patent and claim 12 of the '996 patent are representative of the asserted claims and entered partial final judgment under Fed. R. Civ. P. 54(b) that all asserted claims of the '850 and '996 patents are ineligible under § 101. *CardioNet*, 2018 WL 1542051, at *7.

CardioNet appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

We review a district court's grant of judgment on the pleadings under Rule 12(c) according to the law of the regional circuit. *Allergan, Inc. v. Athena Cosmetics, Inc.*, 640 F.3d 1377, 1380 (Fed. Cir. 2011) (citing *Imation Corp. v. Koninklijke Philips Elecs. N.V.*, 586 F.3d 980, 985 (Fed. Cir. 2009)). The First Circuit reviews orders granting judgment on the pleadings *de novo*. *Marrero-Gutierrez v. Molina*, 491 F.3d 1, 5 (1st Cir. 2007).

Patent eligibility under § 101 is an issue of law that may involve underlying issues of fact. *See Berkheimer v.*

HP Inc., 881 F.3d 1360, 1365 (Fed. Cir. 2018) (citing *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325 (Fed. Cir. 2016)). We review the district court's ultimate conclusion on patent eligibility *de novo*. *Id*. To determine whether a patent claims eligible subject matter, we follow the Supreme Court's familiar two-step framework. *See Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 217 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70–73 (2012). First, we determine whether the claims are directed to a law of nature, natural phenomena, or abstract idea. *Alice*, 573 U.S. at 217 (citing *Mayo*, 566 U.S. at 76–78). If not, then the claims are patent-eligible, and the inquiry is over. If so, we proceed to the second step and determine whether the claims nonetheless include an "inventive concept" sufficient to "'transform the nature of the claim' into a patent-eligible application." *Id*. (quoting *Mayo*, 566 U.S. at 72–73, 78).

On appeal, CardioNet argues that the asserted claims are not directed to a patent-ineligible abstract idea, but rather to technological improvements to cardiac monitoring systems. According to CardioNet, the claims provide a new data analysis process that improves cardiac monitoring technology by enabling physicians to view heart rate trend data and atrial fibrillation burden on a common time scale. Even if directed to an abstract idea, CardioNet argues that (1) the combination of machine and human review of cardiac data, and (2) the use of atrial fibrillation burden—an "entirely new metric"—are inventive concepts sufficient to transform the claims into patent-eligible subject matter. Appellants' Br. 54–55.

InfoBionic responds that the claims merely recite collecting, analyzing, and displaying cardiac data—quintessential abstract concepts—not any particular technology for performing those functions. And because the claims recite only conventional steps performed by conventional hardware, InfoBionic argues, the claims do not otherwise include an inventive concept sufficient to confer eligibility.

We agree with InfoBionic. At step one, we conclude that the claims are directed to collecting, analyzing, and displaying data, which we have repeatedly held to be abstract concepts. *See, e.g.*, *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016) (collecting cases); *Content Extraction and Transmission LLC v. Wells Fargo Bank, National Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014).

While some of the claims are couched as systems or articles, they essentially recite and are directed to collecting, analyzing, and displaying data by conventional means. They begin by collecting physiological data. The specifications explain that a monitoring system "monitors and reports physiological data," which can be analyzed and "arrhythmia events can be identified based on predetermined criteria." '850 patent col. 3 ll. 12–16. The identified events are "correlated" with events identified by a parallel human assessment to determine whether the events are valid. *Id*. col. 3 ll. 31–37. However, the claims are not directed to specific methods for identifying cardiac events or determining correlation between machine- and human-identified events, nor do the specifications disclose specific methods for doing so. Instead, the claims and specifications treat those steps as conventional processes, and therefore the claims cannot be said to require anything more than generic data analysis.

If the machine-identified events are determined to be valid, "the system generates a report relating to both heart rate trend and arrhythmia events." '850 patent col. 3 ll. 37–42. But merely displaying data by conventional methods as part of a series of abstract steps is itself an abstract concept. *See, e.g.*, *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084, 1092–93 (Fed. Cir. 2019); *Univ. of Florida Research Found., Inc. v. General Elec. Co.*, 916 F.3d 1363, 1368 (Fed. Cir. 2019). CardioNet argues that the display of heart rate data and atrial fibrillation burden on a "common time scale" is an improvement over prior art

cardiac monitoring systems because the graph "can be used for asymptomatic AF detection, drug therapy (rate, rhythm, anti-coagulants), pre/post ablation monitoring, and CHF (congestive heart failure) decompensation." Appellants' Br. 40 (quoting '850 patent col. 1 ll. 56–60). However, displaying data, including displaying two data series on the same time axis, is not the sort of "improvement[] to existing technological processes and computer technology" capable of establishing the eligibility of computer-implemented method claims, *see Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150 (Fed. Cir. 2019), and does not make the claimed methods non-abstract despite its alleged utility. CardioNet's unified display may be very useful to physicians, but usefulness alone does not necessarily negate abstractness. *See Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2012) ("Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry." (citing *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127 (1948))). Accordingly, we conclude that the claims are directed to the abstract idea of collecting, analyzing, and displaying data.

Having concluded that the claims are directed to an abstract idea, we consider whether they describe an inventive concept at step two. CardioNet principally argues that the combination of machine and human review of cardiac data as well as the use of atrial fibrillation burden are inventive concepts sufficient to transform the claims into patent-eligible subject matter. InfoBionic argues that the claims recite generic systems for performing conventional functions without specifying any inventive means for doing so.

We agree with InfoBionic. While some claims are cast as systems and articles, they are implemented on generic "monitoring systems," "monitoring stations," and "processing systems" which, according to the specification, can be implantable medical devices and computing systems. Ultimately, the claims depend on methods that can be performed on any general-purpose computing device without

reciting or requiring any nonconventional components or characteristics. Additionally, the steps themselves recite conventional data processing functions, such as obtaining data, analyzing the data to identify features therein, and displaying the data, and do not recite any specific or inventive steps for doing so.

CardioNet identifies two claimed features that it argues are sufficiently inventive to confer patent-eligibility on otherwise abstract claims. First, CardioNet argues that combining automatic atrial fibrillation detection capabilities with human review of a subset of data improves accuracy in atrial fibrillation diagnosis while minimizing the data that must be manually reviewed. Appellants' Br. 45. But spot-checking systems for quality control is the sort of longstanding practice that courts have consistently held to be an abstract idea and is performed here using generic hardware. *See Bilski v. Kappos*, 561 U.S. 593, 611–12 (2010) (holding claims directed to hedging risk ineligible); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093 (Fed. Cir. 2016) (holding claims directed to the concept of analyzing records of human activity to detect suspicious behavior ineligible). Second, CardioNet argues that measuring the atrial fibrillation burden is a new metric developed by the inventors that improves cardiac monitoring by aiding physicians in assessing the severity of an arrhythmia event. Appellants' Br. 55. InfoBionic disputes whether atrial fibrillation burden was in fact a new metric. Appellee's Br. 44. Even assuming that measuring the atrial fibrillation burden is a new metric as CardioNet claims, it is at most a mathematical computation performed on a general-purpose computing device, which could otherwise be "performed by a human, mentally or with pen and paper." *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016). Because the claim limitations, considered individually or collectively, amount only to implementations of abstract ideas using conventional technology, we conclude that the

claims do not include an inventive concept sufficient to transform the claims into patent-eligible applications.

CONCLUSION

We have considered CardioNet's remaining arguments but find them unpersuasive. For the foregoing reasons, the judgment of the district court is affirmed.

AFFIRMED