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.
12/556,323	09/09/2009	Joseph J. Grudzinski	1512.308	2277

72088 7590 02/20/2018

WISCONSIN ALUMNI RESEARCH FOUNDATION
C/O BOYLE FREDRICKSON S.C
840 North Plankinton Avenue
Milwaukee, WI 53203

EXAMINER	
HOLCOMB, MARK	

ART UNIT	PAPER NUMBER
3686	

NOTIFICATION DATE	DELIVERY MODE
02/20/2018	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@boylefred.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOSEPH J. GRUDZINSKI, ROBERT JERAJ, WOLFGANG A. TOME, and JAMEY P. WEICHERT

Appeal 2016-008455
Application 12/556,323[1]
Technology Center 3600

Before BRADLEY W. BAUMEISTER, ADAM J. PYONIN, and AMBER L. HAGY, *Administrative Patent Judges*.

PYONIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1–22, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

---

[1] The Real Party in Interest is identified as the Wisconsin Alumni Research Foundation. *See* App. Br. 3.

STATEMENT OF THE CASE

The Application is directed to "methods and apparatus for the treatment of tumors using radiopharmaceuticals and, in particular, to a system for the computerized scheduling of the administration of such radiopharmaceuticals." Spec. ¶ 3.

Claims 1, 12, and 22 are independent. Claim 1 is reproduced below for reference:

> 1. A system for planning a treatment schedule for a treatment-radiopharmaceutical, the system comprising:
>
> a radiation imaging machine adapted to scan a patient over a volume to measure emitted radiation;
>
> an electronic computer communicating with the radiation imaging machine and executing a stored program held in non-transitory computer readable medium to:
>
> (1) receive a three-dimensional data set from the radiation imaging machine indicating a history of tissue uptake of an imaging-radiopharmaceutical in at least one volume of interest;
>
> (2) deduce an active time of the imaging-radiopharmaceutical in the volume of interest, the active time in the form of a measured time activity curve providing radiation dose rate as a function of time over a treatment period for the at least one volume of interest; and
>
> (3) prepare a treatment schedule for a treatment-radiopharmaceutical different from the imaging-radiopharmaceutical, based on the active time of the imaging-radiopharmaceutical, the treatment schedule providing a schedule of multiple delivery amounts and delivery times for the treatment-radiopharmaceutical, the treatment schedule setting the multiple delivery amounts and delivery times according to a combining of multiple overlapping values of multiple time activity curves spanning the treatment schedule, the multiple time activity curves each based on the measured time activity curve, each of the multiple time activity curves referenced to one of the delivery amounts and delivery times, the delivery amounts and delivery times constrained by a requirement that an

> overlapping radiation dose rate from a combination of the multiple time activity curves referenced to the delivery amounts and delivery times remains above a desired radiation dose rate necessary to kill tumor cells based on the active time of the treatment- radiopharmaceutical deduced from the active time of the imaging radiopharmaceutical.

Claims 1–22 stand rejected under 35 U.S.C. § 101 for being directed to patent-ineligible subject matter. Final Act. 3.

PRINCIPLES OF LAW

An invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: laws of nature, natural phenomena, and abstract ideas are not patentable. *See, e.g.*, *Alice Corp. Pty Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014). The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 566 U.S. 66, 82–83 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice Corp.*, 134 S. Ct. at 2355. The first step in that analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts," e.g., to an abstract idea. *Alice Corp.*, 134 S. Ct. at 2355. If the claims are directed to a patent-ineligible concept, the inquiry proceeds to the second step, where the elements of the claims are considered "individually and 'as an ordered combination"' to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible

application." *Alice Corp.*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1297).

The Court acknowledged in *Mayo* that "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. Therefore, the we consider the claims in their entirety to determine "whether their character as a whole is directed to excluded subject matter." *McRO, Inc. v. Bandai Namco Games Am., Inc.*, 837 F.3d 1299, 1312 (Fed. Cir. 2016) (quotations omitted); *see also Diamond v. Diehr*, 450 U.S. 175, 176 (1981) ("claims must be considered as a whole.").

CONTENTIONS AND ANALYSIS

In rejecting the pending claims under § 101, the Examiner finds the claims are directed to the abstract concept of "solving a business problem, that of determining and scheduling a patient treatment utilizing computers," because "the claims are directed to a series of steps or an apparatus related to planning and scheduling a radiopharmaceutical treatment schedule based on a measured time activity curve for a particular radiation dose." Final Act. 3, 5; *see also* Ans. 6–7. The Examiner finds the claims do not include additional elements sufficient to amount to significantly more than the judicial exception because the additional elements or combination of elements other than the abstract idea "amount to no more than a recitation of . . . generic computer structure that serves to perform generic computer functions," and "functions that are well understood, routine, and conventional activities previously known to the pertinent industry." Final Act. 3–4; *see also* Ans. 8.

We find the Examiner's characterization of the claims—an abstract idea encompassing solving the business problem of determining and scheduling a patient treatment utilizing computers—does not properly account for the limitations of "a radiation imaging machine adapted to scan a patient over a volume to measure emitted radiation; [and] an electronic computer communicating with the radiation imaging machine," as recited in independent claim 1, and similarly recited in independent claims 12 and 22. The Examiner's determination that the claims are directed to an abstract concept, therefore, does not reflect the character of the claims as a whole. *See McRO, Inc.* 837 F.3d at 1312.

Accordingly, we do not sustain the rejection of claims 1–22 under 35 U.S.C. § 101.

DECISION

The Examiner's decision rejecting claims 1–22 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

REVERSED