



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.
12/498,898	07/07/2009	Carol Friedman	070050.3791	9251
21003	7590	06/08/2016	EXAMINER	
BAKER BOTTS L.L.P. 30 ROCKEFELLER PLAZA 44TH FLOOR NEW YORK, NY 10112-4498			HAN, QI	
			ART UNIT	PAPER NUMBER
			2659	
			NOTIFICATION DATE	DELIVERY MODE
			06/08/2016	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):

DLNYDOCKET@BAKERBOTTS.COM

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* CAROL FRIEDMAN, YVES A. LUSSIER,  
and LYUDMILA ENA

---

Appeal 2014-007320  
Application 12/498,898  
Technology Center 2600

---

Before JEAN R. HOMERE, JOSEPH P. LENTIVECH, and  
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

SZPONDOWSKI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–19 and 21. Claim 20 has been cancelled. (App. Br. 4). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

### STATEMENT OF THE CASE

Appellants' invention is directed to methods and systems for extracting genotype and phenotypic information from literature, such as journal articles, via natural language processing. (Spec. 1–2). Claim 1, reproduced below with the disputed limitations in *italics*, is illustrative of the claimed subject matter:

1. A computer implemented method for extracting genotype-phenotype information from natural language input text, comprising:

*receiving natural language input text which includes one or more genotype-phenotype relationships;*

processing, using a processor, said natural language input text to identify one or more biological terms therein;

associating each of said one or more biological terms within said natural language input text with a lexical definition; and

parsing, using a parser, said one or more associated biological terms to replace at least one of said one or more of biological terms with a corresponding associated lexical definition to *identify genotype-phenotype information from said from natural language input text.*

### REJECTIONS

Claim 21 stands rejected under 35 U.S.C. § 112(a) or 35 U.S.C. § 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement.

Claim 21 stands rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter.

Claims 1–4, 8, 9, 14–19, and 21 stand rejected under 35 U.S.C. § 102(b) as anticipated by Rzhetsky et al. (US 2006/0069512 A1; published Mar. 30, 2006) or, in the alternative, under 35 U.S.C. § 103(a) as obvious over the combination of Rzhetsky and Muraca et al. (US 2002/0150966 A1; published Oct. 17, 2002).

Claims 5–7 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Rzhetsky and Kadashevich et al. (US 5,369,577; issued Nov. 29, 1994), or in the alternative, Rzhetsky, Muraca, and Kadashevich.

Claims 10–13 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Rzhetsky and Newman (US 5,774,833; issued June 30, 1998), or in the alternative, Rzhetsky, Muraca, and Newman.

## ANALYSIS

### *35 U.S.C. § 112 and 35 U.S.C. § 101 Rejections*

Appellants have not presented any rebuttal arguments against the Examiner’s 35 U.S.C. § 112, first paragraph, and 35 U.S.C. § 101 rejections of claim 21. (*See* App. Br. 4). Because Appellants have failed to rebut these rejections on the record before us, we summarily sustain both rejections.

### *35 U.S.C. § 102 and 35 U.S.C. § 103 Rejections*

*Issue:* Did the Examiner err in finding Rzhetsky discloses, or in the alternative, the combination of Rzhetsky and Muraca teaches or suggests, “receiving natural language input text which includes one or more genotype-

phenotype relationships” and “identify genotype-phenotype information from said natural language input text” as recited in claim 1?

Appellants contend Rzhetsky does not disclose receiving or identifying “genotype-phenotype information” as defined in Appellants’ Specification. (App. Br. 10). Specifically, Appellants argue “information regarding interactions among genes and proteins, alone, is not genotype-phenotype information as defined in the current application.” (Reply Br. 3). Appellants also provide a dictionary definition of “phenotype information” as “relat[ing] to the visible properties of an organism caused by the interaction of the organism’s genotype and environment.” (App. Br. 10).

We are not persuaded by Appellants’ arguments and agree with the Examiner’s findings. (*See* Final Act. 6–8; Ans. 2–5). Rzhetsky describes a “natural language processing system that is designed to parse the electronic versions of articles published in journals that report on structural interactions among genes and proteins.” (Rzhetsky ¶ 56). Information is extracted “on interactions among genes and proteins, their domain/motif structure, and/or their sub-cellular and tissue expression/distribution patterns[.]” (*Id.*; *see also* Rzhetsky ¶ 57 (describing “recover[ing] structural relationships between the entities”)). Rzhetsky further describes as a result of parsing, terms are classified “and the relationship between the interactions are established.” (Rzhetsky ¶ 61). The Examiner finds, and we agree, Rzhetsky’s discloses gene (genotype) and protein (phenotype) information as recited in claim 1. (*See* Ans. 2–3).

In the Specification, Appellants broadly define “genotype-phenotype information” as “genotype information, phenotype information, a combination of both *and/or* information concerning relationships with

genotype *and/or* phenotype information.” (Spec. 4, ll. 12–14, emphasis added). The Examiner finds, and we agree, that under the broadest reasonable interpretation in light of Appellants’ Specification, any one of the aforementioned items could properly be used for the rejection. (Ans. 2–3). Appellants have not persuasively explained why the Examiner’s findings that Rzhetsky discloses genotype (gene) and phenotype (protein) information is in error.

Regarding the alternative rejection of claim 1 under 35 U.S.C. § 103(a), Appellants argue that Muraca does not cure the noted deficiencies of Rzhetsky. (*See* App. Br. 11–13). This argument is not persuasive. As noted in our discussion of claim 1 above, we find no such deficiencies in Rzhetsky for Muraca to remedy. Nonetheless, we note Muraca describes the “phenotype and genotype. . .includes. . .the expression and accumulation of proteins. . .”, which is consistent with the Examiner’s findings regarding Rzhetsky. (*See* Muraca ¶ 55).

Accordingly, we sustain the Examiner’s prior art rejections of independent claim 1. For the same reasons, we sustain the Examiner’s rejections of independent claims 14 and 21, which also recite the limitation “identify genotype-phenotype information from said natural language input text.” For the same reasons, we sustain the Examiner’s prior art rejections of dependent claims 2–4, 8–9, 15–19, which were not argued separately.

With respect to the Examiner’s 35 U.S.C. § 103(a) rejection of claims 5–7 and 10–13, Appellants argue neither Kadashevich nor Newman, respectively, discloses or suggests the disputed “identify genotype-phenotype information from said natural language input text” limitation. (App. Br. 13–14). However, as noted above, the Examiner did not rely on

Appeal 2014-007320  
Application 12/498,898

Kadashevich or Newman to teach or suggest the disputed limitation.  
Accordingly, for the same reasons as above, we sustain the Examiner's 35  
U.S.C. § 103(a) rejection of claims 5–7 and 10–13.

#### DECISION

For the above reasons, the Examiner's rejections of claims 1–19 and  
21 are affirmed.

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).

AFFIRMED