



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.
11/719,793	05/21/2007	Luyin Zhao	2004P02680WOUS	1498
24737	7590	12/04/2018	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS 465 Columbus Avenue Suite 340 Valhalla, NY 10595			NGUYEN, HIEN NGOC	
			ART UNIT	PAPER NUMBER
			3793	
			NOTIFICATION DATE	DELIVERY MODE
			12/04/2018	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):

patti.demichele@Philips.com  
marianne.fox@philips.com  
katelyn.mulroy@philips.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* LUYIN ZHAO

---

Appeal 2017-009496  
Application 11/719,793  
Technology Center 3700

---

Before: CHARLES N. GREENHUT, JILL D. HILL, and LEE L. STEPINA,  
*Administrative Patent Judges.*

GREENHUT, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from a rejection of claims 4–6, 9, 13–17, 19, 20 and 24–29. We have jurisdiction under 35 U.S.C. § 6(b). A prior appeal, 2013-002046, was decided October 21, 2015.

We affirm.

CLAIMED SUBJECT MATTER

The claims are directed to an in-situ data collection architecture for computer-aided diagnosis. Claim 4, reproduced below, is illustrative of the claimed subject matter:

A medical data method comprising:

(A) at each of a plurality of client sites:

(a) capturing an image of a lesion of a medical subject;  
(b) deriving, from the captured image, at least one feature of the lesion;

(c) from a confirmed diagnosis of the lesion, generating a ground truth for the lesion;

(d) transmitting a message containing the ground truth and at least one of the image and the at least one derived feature to a server disposed externally to the client sites, the message excluding any information identifying the medical subject;

and

(e) repeating steps (a)-(d) a plurality of times;

(B) at the server:

(a) receiving the messages from the plural client sites;

(b) training a computer-aided diagnostic decision support system with the received messages;

(C) at a requesting one of the client sites:

(a) generating a diagnostic image of a lesion of a patient to be diagnosed;

(b) deriving at least one feature of the lesion to be diagnosed;

(c) sending a diagnosis request message including at least one of the diagnostic image and the features to be diagnosed;

(D) at the server:

(a) using the diagnostic decision support system to generate a diagnosis of the lesion;

(b) sending the generated diagnosis to the requesting client site;

and

(E) at the requesting client site:

(a) presenting the diagnosis generated by the diagnostic decision support system.

## REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Coli	US 6,018,713	Jan. 25, 2000
Giger	US 2001/0043729 A1	Nov. 22, 2001
Kasai	US 2003/0026470 A1	Feb. 6, 2003
Huizenga	US 2005/0043614 A1	Feb. 24, 2005
Daw	US 2005/0096530 A1	May 5, 2005

## REJECTIONS

Claims 4–6, 9, 13–17, 19, 20 and 24–29 are rejected under 35 U. S. C. § 101 because the claimed invention is directed to an abstract idea.

Claims 4 and 24–26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kasai, Coli, and Huizenga.

Claims 5, 6, 19, 20 and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kasai, Coli, Huizenga, and Daw.

Claims 9, 13–17, 27, and 28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kasai, Coli, Huizenga, and Giger.

## OPINION

### *§ 103(a)*

Initially we note that the rule requiring all authorities and arguments to be included in the briefs (37 C.F.R. § 41.37(c)(1)(iv)) in an appeal does not permit incorporation by reference of arguments made previously in the prosecution. *See, e.g.*, Appeal Br. 8. Arguments not included in the briefs before us are deemed waived. We also note that our decision in the prior appeal was narrowly drawn, holding only that the Examiner applied an overly broad claim construction which necessitated reversal of the

Appeal 2017-009496  
Application 11/719,793

Examiner's rejections based thereon. The weight of authority is that anything along the lines of "res judicata" is generally inapplicable against a PTO Examiner in an ex parte proceeding. *See, e.g., In re Oelrich*, 666 F. 2d 578, 580 n. 2 (CCPA 1981). Arguments in this regard, particularly those relating to issues not expressly addressed in the previous decision, are of little, if any, value. *See, e.g., Appeal Br. 8.*

The main issue repeatedly raised by Appellant concerning the prior-art rejections of the three independent claims, claims 1, 13 and 19, is:

Coli is merely building a database, possibly a distributed database, which may or may not have patient identifiers. By contrast, claim 4 calls for the client site at which the data was acquired to transmit a message excluding any information identifying the medical subject. In this manner, the client site which generated the image removes the subject identification prior to releasing the message or information.

Appeal Br. 8–9, 10–11, 12–13.

The cited portion of Coli (Final Act. 5 (citing Coli col. 7, l. 49–col. 8, l. 12)) clearly discloses sending data, i.e., a message, and indicates it may do so both with or without patient identification:

At least one of the server computers is programmed to respond to activation of the test data request by causing the data to be sent to the client computer. This feature permits the system to provide aggregated data and demographic information (with or without patient identification)

This act of deciding not to include patient identifying information is reasonably regarded as "excluding" it from the message and remedies the shortcomings discussed in the prior appeal. The fact that aggregated data in a database is the source of the data in Coli's message (Appeal Br. 8, 12) does not undermine the Examiner's rejection because obviousness is not a question of bodily incorporation. *See, e.g., In re Mouttet*, 686 F. 3d 1322,

Appeal 2017-009496  
Application 11/719,793

1332 (Fed. Cir. 2012). What is important is that Coli demonstrates that the technique of excluding patient identifying information from messages was known in the art. We are not apprised of any reason why one skilled in the art would have understood Coli's technique as limited for use only to retrieve, as opposed to collect, aggregated data. When Coli's excluding technique is incorporated into the messages involved in the diagnostic system of Kasai, it is not disputed that such a modification would have resulted in subject matter falling within the scope of the claims. Final Act. 5–6. “Non-obviousness cannot be shown by attacking references individually when the rejection is predicated upon the teachings of a combination of references.” *See In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citation omitted).

Appellant also argues, “Kasai discloses a computer-aided diagnosis center which receives images to be diagnosed, but which does not disclose any of the steps of Sections A and B of claim 4.” Appeal Br. 9; Reply. Br. 3. Appellant's arguments amount to a naked assertion without addressing the specific fact findings made by the Examiner pertaining to these limitations. *See* Final Act. 5. Arguments must address the Examiner's action. 37 C.F.R. § 41.37(c)(1)(iv) (“The arguments shall explain why the examiner erred as to each ground of rejection contested by appellant”). The Board will not advocate for Appellants by scouring the record to see if the Board can identify some flaw in the Examiner's findings of fact, articulated reasoning, or legal conclusions. *See Ex Parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) (citations omitted).

With regard to independent claims 13 and 19 Appellant presents the additional argument that the Examiner fails to point to a message which includes both a ground truth and extracted feature. Appeal Br. 11–12, 13–

14. First, this is because the Examiner relied on Kasai regarding the feature (claims 13, 19) (Final Act. 7–8, 9), Giger regarding its extraction (claim 13) (Final Act. 10), and Huizenga regarding the ground truth (claims 13, 19) (Final Act 8, 10). The test for obviousness is not whether the claimed invention is expressly suggested in any one or all of the references, but whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the *combined teachings* of those references. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Appellant’s argument does not address the combined teachings as applied by the Examiner. Second, as far as the ground truth is concerned, is it not clear why Appellant only addresses the portion of paragraph 32 of Huizenga that relates to image colorization when the pertinent part relied on by the Examiner is Huizenga’s teaching that the training technique of using ground truths was known in the art that: “[t]o develop an automated system for classifying plaque, the model must be ‘trained’ on known examples (‘ground truth’).”

For the foregoing reasons, Appellant’s arguments concerning the prior-art rejections do not apprise us of error therein.

## § 101

### *Principles of Law*

A patent may be obtained for “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101. The Supreme Court has consistently held that this provision contains an important implicit exception: laws of nature, natural phenomena, and abstract ideas are not patentable. *See Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014); *Gottschalk v. Benson*, 409

Appeal 2017-009496  
Application 11/719,793

U.S. 63, 67 (1972) (“Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”). Notwithstanding that a law of nature or an abstract idea, by itself, is not patentable, an application of these concepts may be deserving of patent protection. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293–94 (2012). In *Mayo*, the Court stated that “to transform an unpatentable law of nature into a patent-eligible *application* of such a law, one must do more than simply state the law of nature while adding the words ‘apply it.’” *Mayo*, 132 S. Ct. at 1294 (citation omitted).

In *Alice*, the Court reaffirmed the framework set forth previously in *Mayo* “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. The first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* If the claims are directed to a patent-ineligible concept, then the second step in the analysis is to consider the elements of the claims “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.” *Id.* (quoting *Mayo*, 132 S. Ct. at 1298, 1297).

In other words, the second step is to “search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent on the [ineligible concept] itself.’” *Id.* (brackets in original) (quoting *Mayo*, 132 S. Ct. at 1294). The prohibition against patenting an abstract idea “cannot be circumvented by attempting to limit the use of the formula to a

Appeal 2017-009496  
Application 11/719,793

particular technological environment or adding insignificant postsolution activity.” *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (citation and internal quotation marks omitted). The Court in *Alice* noted that “[s]imply appending conventional steps, specified at a high level of generality,” was not “enough” [in *Mayo*] to supply an “inventive concept.” *Alice*, 134 S. Ct. at 2357 (quoting *Mayo*, 132 S. Ct. at 1300, 1297, 1294).

In *Gottschalk*, the Court, citing *O’Reilly v. Morse* (56 U.S. 62 (1853)), cautioned that a claim “so abstract and sweeping as to cover both known and unknown uses” is not directed to patent-eligible subject matter under 35 U.S.C. § 101. *Gottschalk v. Benson*, 409 US at 68. In *Alice* the Supreme Court reaffirmed this principle:

We have long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable. We have interpreted § 101 and its predecessors in light of this exception for more than 150 years. We have described the concern that drives this exclusionary principle as one of pre-emption. Laws of nature, natural phenomena, and abstract ideas are ‘the basic tools of scientific and technological work. [M]onopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it, thereby thwarting the primary object of the patent laws. We have repeatedly emphasized this concern that patent law not inhibit further discovery by improperly tying up the future use of these building blocks of human ingenuity.

*Alice Corp. Pty. Ltd. v. CLS Bank Intern.*, 134 S. Ct. at 2354 (quotations and citations omitted).

### *Analysis*

In section “D” of the Appeal Brief, Appellant asserts that “[t]he Examiner Has Failed to Make a Prima Facie Showing of Patent Ineligibility

Appeal 2017-009496  
Application 11/719,793

of Any Claim Under 35 U.S.C. § 101.” This section of the Appeal Brief does not focus on any specific claim.<sup>1</sup> Rather, it contains some general statements of legal principles and some exemplary claims from various court cases coupled with the assertion that the Examiner failed to sufficiently address the eligibility issue by not sufficiently comparing the claims at issue with those involved in prior judicial cases, which Appellant argues is required by the examination guidelines of May 19, 2016.<sup>2</sup> Appeal Br. 14–18. To the extent this is the Appellant’s position, we cannot agree with Appellant that the Examiner’s guidelines regarding § 101 instructing examiners to consider whether claims recited concepts similar to those held abstract by the courts created a de facto rule that the Examiner must identify some specific claim similar to specific claims at issue and held ineligible in court cases under § 101 in order to support a § 101 rejection. First, rejections at the PTO must necessarily be able to antedate cases in which the particular legal principles involved undergo judicial review. Second, such a requirement would run counter to the principle of not allowing eligibility determinations to hinge on the so-called draftsman’s art. *See Alice*, 134 S.Ct. at 2358–59 (quoting *Parker v. Flook*, 437 U.S. 584, 593 (1978)). We are not apprised of error in the Examiner’s characterization of the present claims as similar to those held ineligible because they are directed to the abstract idea of computer aided diagnosis using conventional sampling, collecting and data comparing techniques. Final Act. 2–3. This section of

---

<sup>1</sup> 37 C.F.R. § 41.37(c)(1)(iv) provides, “[u]nder each heading identifying the ground of rejection being contested, any claim(s) argued separately or as a subgroup shall be argued under a separate subheading that identifies the claim(s) by number.”

<sup>2</sup> [https://www.uspto.gov/sites/default/files/documents/ieg-may-2016\\_enfish\\_memo.pdf](https://www.uspto.gov/sites/default/files/documents/ieg-may-2016_enfish_memo.pdf)

Appeal 2017-009496  
Application 11/719,793

the Appeal Brief does not identify with particularity any specific errors in the Examiner's position in this regard or direct our attention to any specific language in any specific claim removing it from the realm of the abstract.

Ans. 19.

In section "E" of the Appeal Brief Appellant reproduces steps (A)(a)–(e) and argues "there is nothing abstract about this combination of steps [, and t]his combination would not preempt the use of this approach in all fields." Appeal Br. 20. We cannot agree. Steps (A)(a)–(e) encapsulate the general principle of medical diagnosis—to observe an aspect of an anatomical characteristic, in this case a "feature of the lesion," and form a diagnosis based thereon—within ordinary and conventional aspects of computing: capturing data ("an image"), extracting a component of the data (a "feature"), transmitting post-solution activity, the result of a medical diagnosis ("a ground truth"), while excluding personally identifying patient information. There are no specific structures or acts required of the data collection or transmission. Those acts are recited only in generic and abstract fashion and can be carried out with essentially any capturing and transmitting means or steps. There are also no specific requirements regarding how to derive a feature and form a diagnosis—a basic tool of medical practice. The reach of these steps is clearly broad and preemptive.

Furthermore, Appellant's argument on this point does not address persuasively the Examiner's determination that claim 4 is directed to an abstract idea. *See Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (holding that "[w]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility").

Appellant quotes additional language from claim 4 and makes the assertion, “this claimed combination of steps which is tied to hardware, including client sites and a server, is an intricate set of steps and . . . the combination is not a mere abstract idea.” Appeal Br. 21. However, the broad generic recitations of conventional features of “client sites” and a “server” are not the types of “hardware” recitations that would serve to remove the claim from the realm of the abstract. The latter was one of the specific examples discussed in the May 19, 2016 guidance itself and the former falls within the realm of gathering data over a network as discussed in the July 2015 guidance<sup>3</sup> (to which the May 19, 2016 guidance refers). July 2015 guidance p. 7. Moreover, Appellant cites no authority supporting the proposition that the mere intricacy of a recited set of steps precludes the set of steps from being directed to an abstract idea without significantly more. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1351 (Fed. Cir. 2016) (“Though lengthy and numerous, the claims do not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology.”).

Appellant again argues that limitations (B)–(E) of claim 4 would not “monopolize the basic tools of scientific and technological work.” Again, we disagree. Limitation (B)(b) is exemplary of the degree of abstractness of claim 4 and with it the breath of claim coverage that Appellant seeks exclusive right to: “training a computer-aided diagnostic decision support

---

<sup>3</sup> <https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-update.pdf>

Appeal 2017-009496  
Application 11/719,793

system with the received messages.”<sup>4</sup> This limitation covers any conceivable method, known and unknown, by which a physician, scientist, computer engineer or any other person involved in the diagnosis of lesions or tumors might train a computer to diagnose anything about that lesion or tumor (claim 4), or more particularly, its malignancy (claim 5). This is clearly an overreaching attempt to preempt the basic tools of medical diagnosis. This is not altered by the fact that limitation (B)(b) is surrounded by ordinary any conventional data acquisition and communication steps like sending, receiving, and presenting data, because, as discussed above, patent eligibility is not dependent on the so-called draftsman’s art. Further, Appellant makes only naked assertions and does not identify with particularity precisely what aspects of claim 4 that relate to data acquisition and communication should not be regarded as routine and conventional. Appeal Br. 21; Reply. Br. 6.

The remainder of section E of the Appeal Brief, inconsistently with the requirements of 37 C.F.R. § 41.37(c)(1)(iv), quotes language from various other claims coupled with general assertions they are directed to subject matter that is, for example, “anything but an abstract idea.” Appeal Br. 21–23. “Filing a Board appeal does not, unto itself, entitle an appellant to *de novo* review of all aspects of a rejection.” *See Ex Parte Frye*, 94 USPQ2d at 1075. “[T]he Board will not, as a general matter, unilaterally review those uncontested aspects of the rejection.” *Id* at 1075-76 (citations

---

<sup>4</sup> See also, for example, claim 19: “a diagnostic decision support processor programmed to incrementally train a diagnostic decision support routine using the respective pairs of the received messages” and claim 20: “wherein the diagnostic decision support processor is further programmed to: process the features with the diagnostic decision support routine to generate a diagnosis for the lesion.”

omitted). Again, arguments must address the Examiner's action. 37 C.F.R. § 41.37(c)(1)(iv) ("The arguments shall explain why the examiner erred as to each ground of rejection contested by appellant"). If the Examiner regarded certain steps or elements as conventional (Final Act. 3; Ans. 19–21) it is incumbent upon Appellant to point out with particularity what steps or elements should not have been so regarded and provide at least some rebuttal apprising us as to why. We note briefly, claims 13 and 19 do not appear to present any eligibility issues distinct from those presented regarding claim 4.<sup>5</sup> We also note, regarding the dependent claims, that limiting the diagnosis being performed to a determination of malignancy (claims 5 and 6) or limiting the feature used for making the diagnosis (claim 15) may narrow the abstract idea but these recitations do not make the claimed subject matter non-abstract. Ans. 19–21. These claims still serve to preempt the basic tools of medical diagnosis, just in a slightly more particular way. Reciting a "user interface" (claims 6, 9), "display" (claims 6, 9, 26–29), "processor" (claims 14, 17, 25), "imaging device" (claim 16), "transmitter" (claim 20) or "computer-readable medium carrying software" (claim 24), in such broad and generic terms amounts to including the types of limitations that have repeatedly been held not to make the claimed subject matter amount to "significantly more" under the *Alice* inquiry. Requesting a diagnosis be made using the system (claim 14), in effect, is doing no more than coupling the abstract concept with a directive to "apply it." *See Mayo, supra*.

---

<sup>5</sup> Claim 13 is broader than claims 4 and 19 in the sense that it involves just the collection of data without computer diagnosis training.

Appeal 2017-009496  
Application 11/719,793

For the foregoing reasons we are in agreement with the Examiner's conclusion that the claims are not directed to patent-eligible subject matter and are therefore properly rejected under § 101.

#### DECISION

The Examiner's rejections 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED