

United States Court of Appeals for the Federal Circuit

**XY, LLC, BECKMAN COULTER, INC., INGURAN,
LLC,**
Plaintiffs-Appellants

v.

TRANS OVA GENETICS, LC,
Defendant-Appellee

2019-1789

Appeal from the United States District Court for the District of Colorado in No. 1:17-cv-00944-WJM-NYW, Judge William J. Martinez.

Decided: July 31, 2020

PRATIK A. SHAH, Akin Gump Strauss Hauer & Feld LLP, Washington, DC, argued for all plaintiffs-appellants. Plaintiffs-appellants XY, LLC, Inguran, LLC also represented by Z.W. JULIUS CHEN; DANIEL LYNN MOFFETT, KIRT S. O'NEILL, San Antonio, TX.

ALAN L. BARRY, K&L Gates LLP, Chicago, IL, for plaintiff-appellant Beckman Coulter, Inc.

DAVID A. KELLY, Barnes & Thornburg LLP, Atlanta, GA, argued for defendant-appellee. Also represented by

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Before WALLACH, PLAGER, and STOLL, *Circuit Judges*.

STOLL, *Circuit Judge*.

XY, LLC, Beckman Coulter, Inc., and Inguran, LLC (collectively, “XY”) appeal the district court’s dismissal of certain patent-infringement allegations against Trans Ova Genetics, LC. The district court held asserted claims 1–23 of XY’s U.S. Patent No. RE46,559 ineligible under 35 U.S.C. § 101. The district court also held that XY’s patent-infringement allegations with respect to certain claims of U.S. Patent Nos. 6,732,422, 7,723,116, and 8,652,769 were claim-precluded based on a prior lawsuit filed by XY against Trans Ova. We conclude that the asserted claims of the ’559 patent are directed to a patent-eligible improvement to a method of sorting particles using flow cytometry technology, not to an abstract idea, and that the district court did not apply the proper legal standard to its claim-preclusion analysis. Accordingly, we reverse the district court’s judgment that the asserted claims of the ’559 patent are ineligible under § 101, vacate the district court’s claim-preclusion judgment, and remand for further proceedings.

BACKGROUND

I

The ’559 patent is titled “Enhancing Flow Cytometry Discrimination with Geometric Transformation.” Flow cytometers can be used as “high speed jet-in-air sorters to discriminate particles and cells that are only subtly different.” ’559 patent col. 1 ll. 35–38. The ’559 patent relates to “apparatus and methods for real-time discrimination of particles while being sorted by flow cytometry . . . resulting in enhanced discrimination between populations of

particles.” *Id.* at col. 1 ll. 26–31. For example, the invention of the ’559 patent “can be used to separate X from Y bearing sperm,” an application useful in animal husbandry to “guarantee[] the sex of off-spring.” *Id.* at col. 1 ll. 38–51.

In the flow cytometry apparatus and methods disclosed by the ’559 patent, particles may be entrained in a fluid stream in the flow cytometer and coupled with a light-emitting element, such as a dye. *Id.* at col. 3 ll. 4–12. Figure 1 illustrates a flow cytometry sort overview:

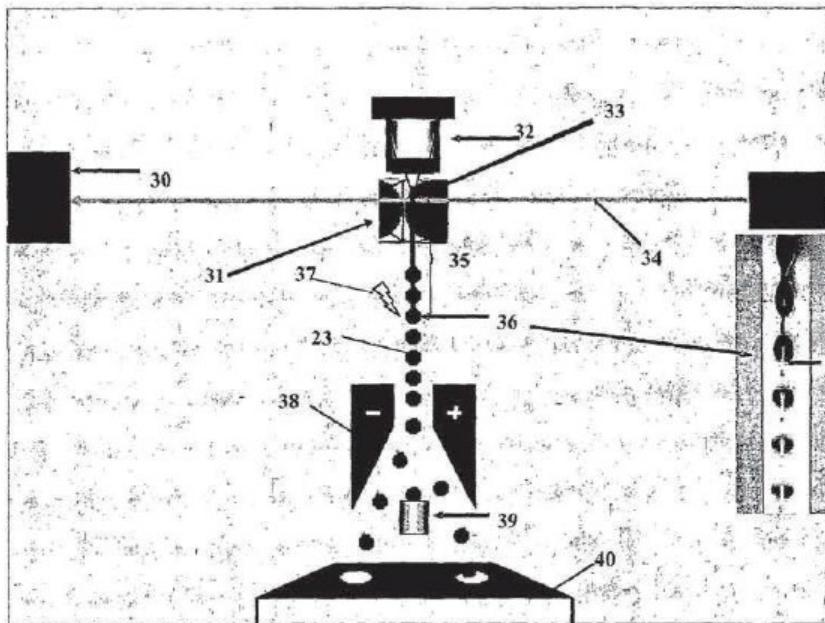


FIG. 1

Id. Fig. 1; *see also id.* at col. 3 ll. 24–25. After passing through a laser beam (34), particles coupled to a light-emitting element may emit signals, such as fluorescence, which are then collected by at least one signal detector, such as a forward scatter detector (30). *Id.* at col. 3 ll. 10–15, 24–34. The “signal detector may be connected to a system . . . in which signal data indicative of the signals may be processed and analyzed in order to determine a sort decision.”

Id. at col. 3 ll. 36–40. “While a sort decision is being determined, particles may pass through a drop delay (35).” *Id.* at col. 3 ll. 41–43. Following a sort decision, “a pulse of charge (37) may be applied to a droplet (23) containing a particle. Droplets may pass through charged deflection plates (38) in order to sort particles into a desired sort receptacle (40).” *Id.* at col. 3 ll. 44–48.

To distinguish particles and determine a sort decision, signal data affiliated with each individual particle may be analyzed, such as by use of a signal processor to “convert[] signals . . . affiliated with each individual particle into n-dimensional parameter data.” *Id.* at col. 3 ll. 50–54. Signals and n-dimensional parameter data “may be plotted on a graph . . . to categorize the data points into a population.” *Id.* at col. 3 l. 64 – col. 4 l. 4. When particles are similar and signals affiliated with the particles vary only slightly, “the n-dimensional parameter data corresponding to the signals,” when plotted, “may place data points very close together,” such that “it may be difficult to categorize the data points into a population.” *Id.*

“Conventional technologies may have disregarded these points that are so close together and may have decided to throw out that particle because it could not have been distinguished.” *Id.* at col. 4 ll. 4–7. For example, “using a typical unaltered light signal detected by a flow cytometer” may not discriminate between “male determining and female determining sperm cell[s].” *Id.* at col. 4 ll. 56–58.

Accordingly, the ’559 patent discloses that “[i]t may be desirable in embodiments to reconfigure data to enhance separation between data points,” such as by “geometric transformation.” *Id.* at col. 4 ll. 7–14. For example, embodiments of the invention may employ a signal processor that converts signal data “into n-dimensional parameter data to which at least one alteration (48) (e.g. rotational alteration, translation operation, scaling operation, any

combination of these and the like) may be applied.” *Id.* at col. 5 ll. 41–49.

The claimed methods increase spatial separation of data corresponding to each population at least by “rotationally alter[ing] the n-dimensional parameter data.” *Id.* at col. 17 ll. 14–19. For example, embodiments of the claimed “invention may involve rotating data to increase a separation of data from male determining cells to female determining cells.” *Id.* at col. 5 ll. 58–60; *see also id.* at col. 19 ll. 16–21 (similar). The ’559 patent discloses that “[i]n addition to rotation, it has been found that there may be a need for tracking and zooming of the data.” *Id.* at col. 7 ll. 20–22. Accordingly, in addition to “rotationally alter[ing] the n-dimensional parameter data,” claimed embodiments of the invention may further include “scaling” and/or “translating the n-dimensional parameter data.” *Id.* at col. 17 ll. 14–19, 48–54, col. 18 ll. 13–22. “These combinations can be significant, for example sex selection may not be optimally achieved by any other method, hence the importance of this invention.” *Id.* at col. 7 ll. 22–25. The invention’s “[c]larity of delineation may allow each population to be selected more accurately than in any other separation system.” *Id.* at col. 6 ll. 54–56.

Claim 1 is the sole independent claim of the ’559 patent and recites:

1. A method of operating a flow cytometry apparatus with at least n detectors to analyze at least two populations of particles in the same sample, the method comprising:
 - (a) establishing a fluid stream in the flow cytometry apparatus with at least n detectors, the at least n detectors including a first detector and a second detector;
 - (b) entraining particles from the sample in the fluid stream in the flow cytometry apparatus;

- (c) executing instructions read from a computer readable memory with a processor, the processor being in communication with the first detector in the flow cytometer, to detect a first signal from the first detector based on individual particles in the fluid stream;
- (d) executing instructions read from the computer readable memory with the processor, the processor being in communication with the second detector in the flow cytometer, to detect a second signal from the second detector based on the individual particles in the fluid stream;
- (e) executing instructions read from the computer readable memory with the processor to convert at least the first signal and the second signal into n-dimensional parameter data for detected particles in the sample, wherein the n-dimensional parameter data for particles from the at least two populations overlap in at least one of the dimensions;
- (f) executing instructions read from the computer readable memory with the processor to rotationally alter the n-dimensional parameter data so that spatial separation of the data from the particles from the at least two populations in the at least one dimension that is overlapped is increased;
- (g) executing instructions read from the computer readable memory with the processor to real-time classify each of the individual detected particles into one of a first population and a second population of the at least two populations based on at least the rotationally altered n-dimensional parameter data; and

(h) using the real-time classification, sorting the individual particles with the flow cytometer.

Id. at col. 16 l. 54 – col. 17 l. 27.

II

In December 2016, XY sued Trans Ova for infringement of seven patents relating to technology for sex selection of non-human mammals. When XY filed its 2016 lawsuit, it had an appeal pending from a 2012 lawsuit against Trans Ova asserting infringement of different patents directed to similar technology. *See XY, LLC v. Trans Ova Genetics, L.C.*, 890 F.3d 1282 (Fed. Cir. 2018).

Trans Ova filed a motion for judgment on the pleadings, arguing that the asserted claims of the '559 patent are ineligible under § 101. Applying the Supreme Court's two-step framework for determining patent eligibility, the district court determined that the '559 patent claims are ineligible under § 101. *XY, LLC v. Trans Ova Genetics, LC*, 333 F. Supp. 3d 1097, 1102–06 (D. Colo. 2018) (*Eligibility Op.*) (applying *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014)). At *Alice* step one, the district court held that claim 1 of the '559 patent was directed to the abstract idea of a “mathematical equation that permits rotating multi-dimensional data.” *Id.* at 1105. At *Alice* step two, the district court held that the asserted claims lacked an inventive concept because XY admitted that each claim element was known in the art. *See id.* at 1105–06.

Trans Ova also filed a motion to dismiss, arguing that the district court should hold XY's infringement allegations regarding the '422, '116, and '769 patents barred by claim preclusion based on XY's 2012 lawsuit. The district court granted Trans Ova's motion to dismiss with respect to the '422, '116, and '769 patent-infringement allegations. *XY, LLC v. Trans Ova Genetics, LC*, 323 F.R.D. 630, 633–34, 638 (D. Colo. 2018) (*Claim Preclusion Op.*). The district

court stayed proceedings on XY's remaining causes of action pending the outcome of this appeal.

XY appeals. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

XY argues that the district court erred in holding the asserted claims of the '559 patent ineligible under § 101 and in holding XY's infringement allegations regarding the '422, '116, and '769 patents barred by claim preclusion. We address each argument in turn.

I

We hold that the district court erred in granting Trans Ova's motion for judgment on the pleadings that the asserted claims of the '559 patent are ineligible under § 101.

We apply regional circuit law in our review of procedural aspects of a motion for judgment on the pleadings. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1325–26 (Fed. Cir. 2017). Applying Tenth Circuit law, we review de novo the district court's grant of Trans Ova's motion for judgment on the pleadings, accepting as true all facts pleaded by XY. See *Aspenwood Investment Co. v. Martinez*, 355 F.3d 1256, 1259 (10th Cir. 2004). Patent eligibility under § 101 is ultimately a question of law that may contain underlying issues of fact. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1365 (Fed. Cir. 2018) (first citing *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1338 (Fed. Cir. 2017); and then citing *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325 (Fed. Cir. 2016)). We review a district court's patent eligibility determination de novo. *Id.*

Section 101 provides that “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor.” 35 U.S.C. § 101.

“The Supreme Court has identified three types of subject matter that are not patent-eligible: ‘Laws of nature, natural phenomena, and abstract ideas are not patentable.’” *CardioNet, LLC v. InfoBionic, Inc.*, 955 F.3d 1358, 1367 (Fed. Cir. 2020) (quoting *Alice*, 573 U.S. at 216). The Supreme Court has recognized, however, that “[a]t some level, ‘all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.’” *Alice*, 573 U.S. at 217 (ellipses in original) (quoting *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 566 U.S. 66, 71 (2012)). “Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept.” *Id.* (citing *Diamond v. Diehr*, 450 U.S. 175, 187 (1981)). Indeed, “applications” of abstract concepts “to a new and useful end’ . . . remain eligible for patent protection.” *Id.* (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

The Supreme Court’s two-step *Alice* framework guides courts in determining patent eligibility under § 101. First, we consider the claims “in their entirety to ascertain 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) (quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)). “If the claims are not directed to an abstract idea, the inquiry ends.” *Id.* If the claims are directed to an abstract idea, we proceed to step two and “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 78–79).

Beginning our analysis with *Alice* step one, we conclude that the district court erred when it held that the claims are directed to “the mathematical equation that permits rotating multi-dimensional data.” *Eligibility Op.*, 333 F. Supp. 3d at 1105. As Trans Ova’s counsel acknowledged during oral argument, claim 1 of the ’559 patent is

not merely directed to a “mathematical equation that permits rotating multi-dimensional data.” Oral Arg. at 22:34–56, <http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2019-1789.mp3> (characterizing claim 1 of the ’559 patent as directed to “using math to sort particles in real time” in a flow cytometer). Rather, the claims are directed to a purportedly improved method of operating a flow cytometry apparatus to classify and sort particles into at least two populations in real time, wherein first and second detectors detect signals from individual particles and a processor converts the signals to n-dimensional parameter data and rotationally alters that data to increase spatial separation among the data, thereby facilitating classification and sorting of each individual particle.

We find the Supreme Court’s decision in *Diehr* and this court’s decision in *Thales Visionix Inc. v. United States*, 850 F.3d 1343 (Fed. Cir. 2017), instructive in our step one analysis. In *Diehr*, the Supreme Court held eligible claims reciting a method of operating a rubber-molding press employing computer components and the well-known Arrhenius equation to constantly determine the temperature of the press’s mold, calculate when the optimal cure time was reached, and automatically open the press at that time. *See* 450 U.S. at 179 n.5. The result was “a synthetic rubber product that ha[d] been perfectly cured—a result heretofore unknown in the art.” *Id.* at 193 n.15.

In *Thales*, we held patent-eligible claims “directed to systems and methods that use inertial sensors in a non-conventional manner to reduce errors in measuring the relative position and orientation of a moving object on a moving reference frame.” 850 F.3d at 1348–49. By configuring inertial sensors so as to measure gravitational field and position information relative to the moving platform, rather than measuring inertial changes with respect to the earth, the inventors could “increase[] the accuracy with which inertial sensors measure the tracked object on the moving frame” and “track the position and orientation of the object

within the moving platform without input from a vehicle attitude reference system or calculating orientation or position of the moving platform itself.” *Id.* at 1345.

The asserted ’559 patent claims are analogous to the claims at issue in *Diehr* and *Thales*. Like the claims in *Diehr*, the asserted claims “describe in detail a step-by-step method” for accomplishing a physical process. 450 U.S. at 184. *Diehr*’s claimed process “mold[ed] precision synthetic rubber” to produce “a synthetic rubber product that has been perfectly cured,” *id.* at 184, 193 n.15, and the ’559 patent’s claimed method classifies and separates individual particles from a sample “more accurately than in any other separation system,” ’559 patent col. 6 ll. 54–56. *Diehr*’s claims and the asserted claims of the ’559 patent each represent a purported improvement to otherwise-known industrial or laboratory processes through specific application of mathematical algorithms.

Similarly, the *Thales* claims and the asserted ’559 patent claims both recite methods in which at least two sensors or detectors gather data about an object before mathematical operations are applied to the gathered data to generate more accurate information about the object than was previously possible in the art. *Thales*, 850 F.3d at 1345–46; ’559 patent col. 6 ll. 54–56, col. 16 l. 54 – col. 17 l. 27. Both sets of claims purport to improve results—“increas[ing] the accuracy with which inertial sensors measure the tracked object on the moving frame” in *Thales*, 850 F.3d at 1345, and supplying “the accuracy required to provide highly pure particle separation” of similar particles in the ’559 patent, ’559 patent col. 7 ll. 13–16.

As in *Diehr* and *Thales*, the asserted ’559 patent claims “implement[] or appl[y] [mathematical] formula[s] in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect.” *Diehr*, 450 U.S. at 192; see *Thales*, 850 F.3d

at 1347–48 (quoting *Diehr*, 450 U.S. at 192). The asserted claims therefore satisfy the requirements of § 101.

Contrary to Trans Ova’s argument and the district court’s decision, the ’559 patent claims are not analogous to those held ineligible in *Parker v. Flook*, 437 U.S. 584 (1978). The representative claim in *Flook* “simply provide[d] a new and presumably better method for calculating alarm limit values,” requiring nothing more than updating an alarm limit—a number—through application of the recited formula. *Id.* at 585, 594–95. Though *Flook*’s claim was cabined to “updating the value of at least one alarm limit . . . in a process comprising the catalytic chemical conversion of hydrocarbons,” neither the claim nor the specification provided any guidance regarding details of the claimed method. *Id.* at 586, 596. The patent application at issue contained no “disclosure relating to the chemical processes at work, the monitoring of process variables, or the means of setting off an alarm or adjusting an alarm system.” *Id.* at 586. Accordingly, the Supreme Court concluded that the patent application was directed to nothing more than “a formula for computing an updated alarm limit.” *Id.*

Here, by contrast, claim 1 of the ’559 patent recites an improved method of operating a flow cytometry apparatus to sort individual particles in the same sample in real time, and includes a detailed recitation of the means for doing so. ’559 patent col. 6 ll. 54–56, col. 16 l. 54 – col. 17 l. 27. Though the asserted claims employ formulas to improve classification and separation of individual particles, the formulas operate to achieve the improved result of the claimed method only when combined with the specific detectors and other flow cytometry limitations in the claims. See *id.* at col. 6 ll. 33–56, col. 16 l. 54 – col. 17 l. 27. As the Supreme Court has stated, “a process is not unpatentable simply because it contains a law of nature or a mathematical algorithm.” *Diehr*, 450 U.S. at 187 (quoting *Flook*, 437 U.S. at 590); see *Thales*, 850 F.3d at 1349 (“That a

mathematical equation is required to complete the claimed method[s] . . . does not doom the claims to abstraction.”). Like the claims in *Diehr* and *Thales*, claim 1 of the ’559 patent incorporates applied mathematics in a purported improvement to an otherwise-known method to yield an improved result.

Trans Ova’s and the district court’s analogies to *Cleveland Clinic Foundation v. True Health Diagnostics LLC*, 859 F.3d 1352 (Fed. Cir. 2017), are similarly unavailing. The *Cleveland Clinic* claims used a known laboratory technique to observe a previously unknown natural phenomenon. 859 F.3d at 1360–61. By contrast, the ’559 patent’s claimed invention purports to improve a laboratory technique for detecting, classifying, and sorting particles from an individual sample, so as to sort each population of particles “more accurately than in any other separation system.” ’559 patent col. 6 ll. 54–56.

Having concluded that the asserted claims of the ’559 patent are not directed to an abstract idea at *Alice* step one, we need not reach *Alice* step two. See *Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1007 (Fed. Cir. 2018) (citing *Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1361 (Fed. Cir. 2018)).

II

Turning to the issue of claim preclusion, the parties’ only dispute concerns whether the district court properly concluded that XY’s 2012 and 2016 lawsuits present the same cause of action. XY argues that the district court erred by failing to compare the currently asserted patent claims to the previously asserted patent claims to determine whether the causes of action in the two lawsuits are essentially the same. We agree.

“In assessing claim preclusion, we apply the law of the regional circuit in which the district court sits.” *SimpleAir, Inc. v. Google LLC*, 884 F.3d 1160, 1165 (Fed. Cir. 2018)

(citing *Senju Pharm. Co. v. Apotex Inc.*, 746 F.3d 1344, 1348 (Fed. Cir. 2014)). “To apply claim preclusion, ‘three elements must exist: (1) a [final] judgment on the merits in an earlier action; (2) identity of parties or privies in the two suits; and (3) identity of the cause of action in both suits.’” *Lenox MacLaren Surgical Corp. v. Medtronic, Inc.*, 847 F.3d 1221, 1239 (10th Cir. 2017) (alteration in original) (quoting *King v. Union Oil Co. of Cal.*, 117 F.3d 443, 445 (10th Cir. 1997)). “[W]hether a particular cause of action in a patent case is the same as or different from another cause of action has special application to patent cases, and we therefore apply our own law to that issue.” *Senju*, 746 F.3d at 1348 (citing *Acumed LLC v. Stryker Corp.*, 525 F.3d 1319, 1323 (Fed. Cir. 2008)).

Our cases define a cause of action based on the transactional facts from which it arises. See *SimpleAir*, 884 F.3d at 1165 (first citing *Senju*, 746 F.3d at 1349; and then citing *Acumed*, 525 F.3d at 1323–24). In a patent case, transactional facts include “both the asserted patents and the accused activity.” *Id.* (first citing *Senju*, 746 F.3d at 1349; and then citing *Acumed*, 525 F.3d at 1323–24). “[W]here different patents are asserted in a first and second suit, a judgment in the first suit will trigger claim preclusion only if the scope of the asserted patent claims in the two suits is essentially the same.” *Id.* at 1167.

Here, the district court stated the proper test: whether the scope of the patent claims asserted in the 2012 and 2016 lawsuits was “materially’ the same.” *Claim Preclusion Op.*, 323 F.R.D. at 635; see *SimpleAir*, 884 F.3d at 1167. But it did not actually address or compare any of the asserted claims of the ’422, ’116, or ’769 patents to the patent claims asserted in the 2012 litigation. Instead, the district court concluded that claim preclusion applied to XY’s ’422 and ’116 patent-infringement allegations simply because (1) these patents issued before XY filed the 2012 lawsuit; and (2) XY’s allegations of infringement “address the same, or substantially the same subject matter as

previously filed claims and [are] directed at a previously accused product or process.” *Claim Preclusion Op.*, 323 F.R.D. at 635–36, 638. The district court provided no further explanation of why the subject matter of the ’422 and ’116 patent claims is the same as that of the previously asserted patent claims. Instead, the district court merely concluded, without explanation, that the ’422 and ’116 patents were “part of the same transaction that prompted the 2012 [l]awsuit,” because they were “related in time, origin, and motivation” to, and would have been “a convenient trial unit” with, the patents asserted in the 2012 lawsuit. *Id.* at 638. The ’769 patent issued after the deadline for XY to amend its complaint in the 2012 lawsuit without leave of court. But the district court reasoned that, since the ’769 patent “was a continuation of a patent already in suit,” and “would be accusing the same Trans Ova products and processes,” “XY had a duty to move to amend” its complaint in the 2012 lawsuit to add the ’769 patent. *Id.*

We find the claim-preclusion issue here materially indistinguishable from that in *SimpleAir*. In *SimpleAir*, we vacated the district court’s holding that two patent lawsuits involved the same cause of action. 884 F.3d at 1164, 1171. The district court’s holding was based solely on the fact that the earlier-asserted patents and the later-asserted patents shared a common specification and were continuations of, and terminally-disclaimed to, the same parent patent. *Id.* at 1164. We distinguished claims in terminally disclaimed continuation patents from reexamined claims, noting that unlike reexamined claims, “terminally-disclaimed continuation patents could ‘provide larger claim scope to a patentee than the patentee had under’ the parent patent.” *Id.* at 1167 (quoting *Senju*, 746 F.3d at 1353). Accordingly, we held that “given the substantively different requirements of continuation patents as compared to reexaminations, the district court erred in holding *SimpleAir*’s latest suit to be claim-precluded without any comparison of

the asserted claims to the claims involved in” SimpleAir’s prior lawsuits. *Id.*

Like *SimpleAir*, the present case involves later-asserted patent claims that “could ‘provide larger claim scope to a patentee’” than the earlier-asserted patent claims. *Id.* (quoting *Senju*, 746 F.3d at 1353). The ’422 and ’769 patents are continuations or continuations-in-part of U.S. Patent No. 6,149,867, which was asserted in the 2012 lawsuit, and the ’769 patent is terminally-disclaimed over certain patents asserted in the 2012 lawsuit. The ’116 patent is closely related to and incorporates by reference the previously asserted ’867 patent. In its decision, the district court did not even mention the asserted claims of the ’422, ’116, or ’769 patents, let alone analyze their scope as compared to the scope of the patent claims asserted in XY’s 2012 lawsuit, as required under *SimpleAir*. See 884 F.3d at 1167. We thus conclude that the district court erred in its claim-preclusion analysis by failing to compare the scope of the patent claims asserted in the 2012 lawsuit with the scope of the patent claims asserted in the 2016 lawsuit.

For its part, Trans Ova argues that we should nevertheless affirm the district court’s judgment because the asserted claims of the ’422, ’116, and ’769 patents are “essentially the same” as the patent claims asserted in XY’s 2012 lawsuit. XY disputes this characterization, arguing that the asserted claims of the ’422, ’116, and ’769 patents have a “materially different scope” from the patent claims asserted in XY’s 2012 lawsuit. Reply Br. 26; *see also id.* at 24–29. For example, XY maintains that the ’116 patent claims’ recitation of a pulsed laser renders them patentably distinct from the patent claims asserted in the 2012 lawsuit, none of which claim “radiation-based sperm processing.” Appellant’s Br. 44–45. Trans Ova acknowledges that the patents asserted in the 2012 lawsuit “do not expressly recite . . . using a pulsed laser,” but it maintains that this omission is “immaterial,” because those patents encompass using a “laser exciter,” and “pulsed lasers were

both well known in the art and an obvious choice to sort sperm.” Appellee’s Br. 39–40. We leave it to the district court to decide these issues in the first instance and compare the scope of the asserted claims to those asserted in the prior litigation.

Accordingly, we vacate the district court’s dismissal of XY’s infringement allegations as to the ’422, ’116, and ’769 patents and remand to the district court to conduct a claim-preclusion analysis under the proper standard.

CONCLUSION

We have considered the parties’ remaining arguments and do not find them persuasive. For the reasons set forth above, we reverse the district court’s judgment that the asserted claims of the ’559 patent are ineligible under § 101. We vacate the district court’s dismissal of XY’s infringement allegations based on the ’422, ’116, and ’769 patents, and remand for further proceedings consistent with this opinion.

REVERSED-IN-PART, VACATED-IN-PART, AND REMANDED

COSTS

Costs to Appellant.