

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF KANSAS**

CAPSTAN AG SYSTEMS, INC.,

Plaintiff,

v.

**RAVEN INDUSTRIES, INC. and
CNH INDUSTRIAL AMERICA, LLC,**

Defendants.

Case No. 16-cv-04132-DDC-KGS

MEMORANDUM AND ORDER

On August 1, 2016, plaintiff Capstan AG Systems, Inc. filed a Complaint, alleging that defendants Raven Industries, Inc. and CNH Industrial America, LLC (collectively “defendants”) have infringed on two of plaintiff’s patents. Doc. 1. On August 23, 2016, defendants filed a Motion to Dismiss (Doc. 18). In their Motion, defendants assert that the court should dismiss the Complaint because plaintiff’s patents are invalid under 35 U.S.C. § 101. Defendants also request oral argument. After considering the parties’ submissions, the court finds that oral argument would not inform its decision materially. The court thus denies the request for oral argument. And, for reasons explained below, the court denies defendant’s Motion to Dismiss.

I. Background

Because defendants bring this motion under Federal Rule of Civil Procedure 12(b)(6), the court takes these facts from plaintiff’s Complaint and the two exhibits attached to it. See *Smith v. United States*, 561 F.3d 1090, 1098 (10th Cir. 2009).

Plaintiff is a Kansas corporation that began as a start-up in 1992. Today, plaintiff creates and sells agricultural products, specializing in agrochemical¹ spraying applications. Plaintiff “is responsible for introducing pulse-width-modulated (PWM) spraying technology to the agricultural market.” Doc. 1 ¶ 13. PWM is a technique used to control the amount of power provided to electronic devices. See U.S. Patent No. 8,191,795 at 1:16–19, Doc. 1-1 at 17 [hereinafter ‘795 Patent].² For instance, the valves connected to the spray nozzles in agrochemical spraying systems use PWM control to vary spray-rates in different sections of the system, which allows the nozzles to take turns spraying the chemical. Doc. 1 ¶¶ 13–14; ‘795 Patent at 1:16–27; Doc. 28 at 7.³ So, PWM control allows farmers to reduce overlap when applying agrochemicals. ‘795 Patent at 1:18–19, 6:15–26; Doc. 1 ¶ 14. By reducing overlap, farmers spray more precisely and thus are able to reduce waste and misapplication, which in turn increases crop yields and reduces costs. Doc. 28 at 7; see also ‘795 Patent at 6:15–26 (discussing “the prior art[’s]” ability to reduce overlap).

In 1996, plaintiff began selling its first PWM sprayer system. Plaintiff’s PWM technology soon caught the attention of Tyler Industries, a sprayer and fertilizer application company. Plaintiff and Tyler entered into an agreement, making Tyler the principal commercial distributor of plaintiff’s PWM technology. The pair named their joint-PWM product “AIM Command,” and plaintiff’s PWM technology soon became the industry standard.

Sometime later, Case Corporation purchased Tyler. Case Corporation later became CNH Industrial America, LLC (“CNH”)—one of the two defendants sued here. These ownership and

¹ This term generally refers to liquids used in agriculture, such as fertilizer and pesticide.

² Where it cites material within the ‘795 patent (Doc. 1-1) the court uses the following form: column:line number(s). Because the two patents’ specifications are identical, the court cites only the ‘795 patent here.

³ The court references and cites plaintiff’s Response (Doc. 28) twice in this section for clarification and to explain the practical importance of the technology at issue here. Defendants do not dispute these facts and the court’s decision here relies solely on the facts alleged in the Complaint and the exhibits attached to it.

name changes notwithstanding, plaintiff continued to honor its agreement with Tyler, and both Case and CNH sold plaintiff's PWM system on their sprayers.

In 2011, plaintiff created a new sprayer technology—PinPoint®. Id. ¶ 17. In 2012 and 2013, plaintiff obtained two patents related to the technology: U.S. Patent Numbers 8,191,795 (“the ’795 patent”) and 8,523,085 (“the ’085 patent”). Id. ¶¶ 25, 28. Plaintiff's PinPoint® technology allows agrochemical-application rates to vary “across the width of the [spraying] system in response to one or more conditions or parameters that may exist in the field.” ’795 Patent at 1:59–62. For example, as a tractor carrying a spraying system turns corners in the field, the nozzles on the outside of the system speed up, while the nozzles closer to the tractor slow down. Id. at 2:54–67. To maintain even coverage of the agrochemical, the flow rate of the outer nozzles must increase, while the flow rate of the inner nozzles must decrease. Id. The PinPoint® technology adjusts the spray rate for each nozzle to compensate for this problem, while controlling the overall flow rate for the spraying system as a whole. Id. at 1:62–65, 2:63–67. Not long after its release, “[f]armers and professional sprayers alike demanded” this “nozzle-by-nozzle turn compensation feature,” allowing PinPoint® to enjoy “phenomenal success in the agriculture industry.” Doc. 1 ¶ 18.

In 2012, defendant CNH and plaintiff entered into an agreement allowing CNH to offer PinPoint® as a factory-installed option on CNH sprayers. CNH adopted the name AIM Command PRO for the PinPoint® technology. The PinPoint® technology became extremely popular, and CNH eventually featured the technology on more than 80% of CNH sprayers. Despite the technology's success, CNH ended its agreement with plaintiff in 2016 and began using a recently-introduced system—the Hawkeye system—manufactured by defendant Raven Industries, Inc. (“Raven”). CNH named its new system AIM Command FLEX.

Plaintiff alleges that Raven’s Hawkeye system and CNH’s AIM Command FLEX system infringe on plaintiff’s two PinPoint®-related patents. Specifically, plaintiff alleges that these systems infringe on claims 1–6, 8–9, 12, 14, and 34 of plaintiff’s ’795 patent and claims 1–4, 6, 8, 12, 14–16, and 19 of plaintiff’s ’085 patent.⁴ Defendants contend that plaintiff’s ’795 and ’085 patents are invalid and so, they ask the court to dismiss plaintiff’s Complaint under Rule 12(b)(6) for failing to state a claim. Doc. 19.

II. Rule 12(b)(6) Motion to Dismiss Standard

Federal Rule of Civil Procedure 8(a)(2) provides that a complaint must contain “a short and plain statement of the claim showing that the pleader is entitled to relief.” Although this Rule “does not require ‘detailed factual allegations,’” it demands more than “[a] pleading that offers ‘labels and conclusions’ or ‘a formulaic recitation of the elements of a cause of action.’” *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (quoting *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 555 (2007)).

“To survive a motion to dismiss, a complaint must contain sufficient factual matter, accepted as true, to ‘state a claim to relief that is plausible on its face.’” *Id.* (quoting *Twombly*, 550 U.S. at 570). “A claim has facial plausibility when the plaintiff pleads factual content that allows the court to draw the reasonable inference that the defendant is liable for the misconduct alleged.” *Id.* (citing *Twombly*, 550 U.S. at 556). “Under this standard, ‘the complaint must give the court reason to believe that this plaintiff has a reasonable likelihood of mustering factual support for these claims.’” *Carter v. United States*, 667 F. Supp. 2d 1259, 1262 (D. Kan. 2009) (quoting *Ridge at Red Hawk, LLC v. Schneider*, 493 F.3d 1174, 1177 (10th Cir. 2007)).

⁴ A patent “claim” is the part of a patent where an applicant “set[s] forth the parameters of the invention . . . claims [also] measure the invention for determining patentability . . . [and] determine what constitutes infringement.” 1 Donald S. Chisum, *A Treatise on the Law of Patentability, Validity and Infringement Part I Glossary Patent Terms*, LexisNexis (database updated 2016).

On a motion to dismiss under Rule 12(b)(6)—like this one—the court assumes that a complaint’s factual allegations are true, but need not accept mere legal conclusions as true. *Id.* at 1263. “Threadbare recitals of the elements of a cause of action, supported by mere conclusory statements” are not enough to state a claim for relief. *Iqbal*, 556 U.S. at 678. In addition to the complaint’s factual allegations, the court also may consider “attached exhibits and documents incorporated into the complaint by reference.” *Smith*, 561 F.3d at 1098 (citations omitted).

III. Analysis

Defendants ask the court to dismiss plaintiff’s Complaint because plaintiff’s patents are invalid under 35 U.S.C. § 101. Patent invalidity is an affirmative defense to an infringement claim. *Commil USA, LLC v. Cisco Sys., Inc.*, — U.S. —, 135 S. Ct. 1920, 1929 (2015). A party may raise invalidity as an affirmative defense in a Rule 12(b)(6) motion only when the defense “appears plainly on the face of the complaint itself.” *Miller v. Shell Oil Co.*, 345 F.2d 891, 893 (10th Cir. 1965); *Jones v. Bock*, 549 U.S. 199, 215 (2007); see also *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1347 (Fed. Cir. 2016) (“Courts may . . . dispose of patent-infringement claims under § 101 whenever procedurally appropriate.” (citations omitted)). If the defense does not appear plainly on the face of the complaint, however, the court must deny the Rule 12(b)(6) motion or convert it to one for summary judgment. *Miller*, 345 F.2d at 893; *Turner & Boisseau, Inc. v. Nationwide Mut. Ins. Co.*, 944 F. Supp. 842, 847 (D. Kan. 1996).

Because patents are presumed valid, a defendant, to succeed on an invalidity defense, must prove that a plaintiff’s patent is invalid by clear and convincing evidence. *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 102–03, 113–14 (2011). Thus, it is “rare that a patent infringement suit can be dismissed at the pleading stage for lack of patentable subject matter.”

Card Verification Sols. LLC v. Citigroup Inc., No. 13 C 6339, 2014 WL 4922524, at *2 (N.D. Ill. Sept. 29, 2014) (quoting *Ultramercial, Inc. v. Hulu, LLC*, 722 F.3d 1335, 1338–39 (Fed. Cir. 2013), vacated on other grounds sub nom, *Wildtangent, Inc. v. Ultramercial, LLC*, — U.S. —, 134 S. Ct. 2870 (2014)). Here, then, dismissal is appropriate only if the well-pleaded factual allegations in the Complaint, construed in the light most favorable to plaintiff, suffice to establish that plaintiff’s patents are invalid by clear and convincing evidence. See *Ultramercial, Inc.*, 722 F.3d at 1338–39 (“[T]he only plausible reading of the patent must be that there is clear and convincing evidence of ineligibility” for dismissal under Rule 12(b)(6) to be appropriate); see also *Prescriber, LLC v. Advanced Data Sys. Advanced Corp.*, Nos. 6:14-CV-859, 6:14-CV-862, 6:14-CV-864, 6:14-CV-866, 6:14-CV-867, 6:14-CV-868, 6:14-CV-869, 6:14-CV-871, 6:14-CV-872, 6:14-CV-874, 2015 WL 11170154, at *5 (E.D. Tex. June 29, 2015) (“Defendants have the heightened burden of showing that the ’095 Patent’s subject matter is patent ineligible, after all inferences are drawn in favor of Plaintiff.” (citations omitted)).

The court uses a two-step test—often called the *Alice* test—to determine whether a patent is invalid under § 101. *Alice Corp. v. CLS Bank Int’l*, — U.S. —, 134 S. Ct. 2347, 2355 (2014). In the first step, the court asks whether “the claims at issue are directed to . . . patent-ineligible concepts.” *Id.* (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, — U.S. —, 132 S. Ct. 1289, 1296–97 (2012)). Patent-ineligible concepts include “[l]aws of nature, natural phenomena, and abstract ideas.” *Id.* at 2354 (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, — U.S. —, 133 S. Ct. 2107, 2116 (2013)). If the claims are directed to any of these patent-ineligible concepts, the court moves on to the second step. *Id.* In the second step, the court asks whether “the elements of each claim both individually and ‘as an ordered combination’” fail to “‘transform the nature of the claim’ into a patent-eligible application.” *Id.*

(quoting *Mayo*, 132 S. Ct. at 1297–98). So, for defendants to prevail on their Motion, plaintiff’s Complaint—and the attached patents—must establish, by clear and convincing evidence, that plaintiff’s patent claims are directed to patent-ineligible concepts and do not combine to create patent-eligible applications.

To make the next section of this Order easier to understand, the court briefly discusses the relevant claims of plaintiff’s ’795 and ’085 patents, as well as their specifications.⁵

A. Patent Claims at Issue Here

Plaintiff’s ’795 and ’085 patents are both “directed to an improved system and method for dispensing controlled amounts of a liquid agricultural product through a plurality of valves that are individually controlled or controlled in groups.” ’795 Patent at 1:55–58; U.S. Patent No. 8,523,085 at 1:59–62, Doc. 1-2 at 16 [hereinafter ’085 Patent]. Put another way, both patents aim to improve agrochemical spraying technology by allowing users to control each sprayer nozzle, either individually or by groups of nozzles.

All of the ’795 patent claims at issue in this case are system claims.⁶ To control sprayer nozzles individually, the patent’s claimed sprayer system uses PWM technology; valves mounted on a boom attached to a vehicle, such as a tractor; and a controller “in communication with each of the valves” that “includes a graphic display that allows an operator to input flow related

⁵ A patent’s “specification” is “that part of the patent application . . . which gives a complete description of the invention and how to make it and use it . . . and concludes with one or more claims.” 1 Chisum, *supra* note 4, at Part I Glossary Patent Terms.

⁶ The court discusses two types of claims in this Order: method claims and system claims. Method claims—also called process claims—seek to patent a sequence of actions or steps. *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1317–18 (Fed. Cir. 2005), abrogated on other grounds, *IRIS Corp. v. Japan Airlines Corp.*, 769 F.3d 1359 (Fed. Cir. 2014). So, method claims protect only the method for obtaining a result—they do not protect the result or the items used to create that result. See *In re Kollar*, 286 F.3d 1326, 1332 (Fed. Cir. 2002) (explaining that method claims protect “a series of acts or steps . . . rather than a tangible item”). System claims, however, seek to patent “several components that are used ‘collectively’ to achieve a particular result,” and so they often are held to protect tangible items. Stephen P. Cole, Note, *NTP v. RIM: The Diverging Law Between System and Method Claim Infringement*, 5 *Pierce L. Rev.* 347, 353 (2007) (quoting *NTP, Inc.*, 418 at 1318); but see *id.* at 358 (noting that courts sometimes consider system claims to be, in reality, method claims).

individual control values.” ’795 Patent at 19:58–67 (claim 1); id. at 20:37–39 (claim 8); id. at 22:13–15 (claim 34). The controller is configured to receive “multiple flow related individual control values for each valve,” which it then uses to determine a “flow factor.” Id. at 19:64–20:3 (claim 2). The following formula in claim 1 determines the flow factor for each valve: flow-related values multiplied together divided by the average of all multiplied flow-related values. The controller multiplies a valve’s flow factor by a given “corporate duty cycle percentage,” the resulting number is the valve’s duty-cycle percentage. Id. at 20:14–21 (claim 3). The controller then uses this duty-cycle percentage to determine the rate at which each valve should emit agrochemical, thus providing control over individual valves and their connected nozzles. Id.

The ’795 patent lists several flow-related control values used by the claimed system, including a turn-radius value, wheel-tracks value, and vehicle-affect value. Id. at 20:40–43, 52–55, 60–64. The turn-radius value is based on the “speed of each valve while . . . [it] is traversing along an arc of a turn.” Id. at 20:42–43 (claim 9). The wheel-tracks value increases or decreases the “application rate over wheel tracks produced by a vehicle.” Id. at 20:54–55 (claim 12). And, the vehicle-affect value increases or decreases the “application rate due to . . . vehicle affect[s] [including] wheel tracks, dust generation, air disturbance, or mixtures thereof.” Id. at 20:61–64 (claim 14). No claims explain how to calculate the wheel-tracks and vehicle-affect values.

The ’085 patent is a continuation of the ’795 patent. But, unlike the ’795 patent, the ’085 patent’s claims at issue here include both system and method claims. The ’085 patent’s system claims omit the formula for calculating flow factors, and add little to the ’795 patent’s system claims discussed above. They add, however, references to additional individual-control values, including a swath-overlap value, field-affect value, and vegetative-affect value. ’085 Patent at 20:26–28 (claim 6); id. at 20:32–35 (claim 8). No claims explain how to calculate any of these

values. The '085 patent's method claims simply track the system claims' language, essentially reciting the process by which the system claims are put into use. *Id.* at 20:57–21:26 (claims 14–19).

B. § 101 Invalidity Inquiry

1. Alice Step One: “Directed to *Inquiry*”

In step one of the Alice test, “the ‘directed to’ inquiry” asks whether, “considered in light of the [patent’s] specification,” the “character” of the claims at issue are directed “as a whole . . . to [patent-ineligible] subject matter.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (first quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015); then citing *Genetic Techs. Ltd. v. Merial LLC*, 818 F.3d 1369, 1375 (Fed. Cir.), cert. denied, 137 S. Ct. 242 (2016)). In other words, at step one, the court must ask whether the “focus of the claimed advance over the prior art” is directed to patent-ineligible subject matter. *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).⁷

Defendants contend that the Federal Circuit’s admonition to consider the focus of the patents’ claimed advance over the prior art requires the court to narrow its Alice step-one inquiry to the '795 and '085 patents’ novel claims. Doc. 31 at 2, 4–5. The court disagrees. To adopt defendants’ method would require the court to import the novelty inquiry found under § 102 into the § 101 analysis. The Supreme Court has rejected this method many times. In 1981, the Court stated:

It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis. . . . The “novelty” of any elements of steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.

⁷ Although the court in *Affinity Labs* does not provide a citation for the language it quotes in the passage quoted above, the court believes that the correct source—and, therefore, the proper citation—for this quotation is: *Genetic Techs.*, 818 F.3d at 1375.

Diamond v. Diehr, 450 U.S. 185, 188 (1981) (footnote omitted). The Court reaffirmed its commitment to this principle in *Mayo*—a 2012 decision—holding that it “decline[d] the . . . invitation to substitute §§ 102, 103, and 112 inquiries for the better established inquiry under § 101.” 132 S. Ct. at 1304. And, although recent Supreme Court decisions such as *Mayo* and *Alice* have “invoked the ‘well-understood, routine, and conventional’ language” that conjures up images of the § 102 novelty inquiry, “they did so in the context of describing” step two of the *Alice* test. *Baxter Int’l, Inc. v. CareFusion Corp.*, No. 15-cv-09986, 2016 WL 2770787, at *9 (N.D. Ill. May 13, 2016) (citing *Mayo*, 132 S. Ct. at 1298–1302; then citing *Alice*, 134 S. Ct. 2357–60). So, “any novelty in implementation of the idea is a factor to be considered only in the second step of the *Alice* analysis.” *Affinity Labs*, 838 F.3d at 1261 (quoting *Ultramercial, Inc.*, 772 F.3d at 715). In step one of the *Alice* test, the court simply considers the patent’s claims as a whole to determine what their focus is. See *Diehr*, 450 U.S. at 188 (“In determining the eligibility of respondents’ claimed process for patent protection under § 101, their claims must be considered as a whole.”); *Baxter Int’l*, 2016 WL 2770787, at *9 (“[T]he [c]ourt considers [the plaintiff’s] claims as a whole.” (citing *Diehr*, 450 U.S. at 188)).

How courts should determine what the focus of a patent’s claimed advance over the prior art is, however, is still something of an uncertainty. Despite this uncertainty, many courts have considered whether claims focus on patent-ineligible concepts. Comparing and contrasting some of these cases helps illustrate how courts determine what claims are “directed to” or what the focus of their “claimed advance” is in *Alice*’s step-one inquiry. Two cases holding claims patent-ineligible are particularly enlightening here—*In re TLI Communications LLC Patent Litigation*, 823 F.3d 607 (Fed. Cir. 2016), and *Affinity Labs*—as are two cases finding claims

patent-eligible—*Diehr and McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).

In both *TLI Communications* and *Affinity Labs*, the Federal Circuit held claims patent-ineligible because the claims sought to solve a problem that itself was unpatentable. In *re TLI Commc 'ns*, 823 F.3d at 612; *Affinity Labs*, 838 F.3d at 1258. In *TLI Communications*, the claimed invention was a system for “taking, transmitting, and organizing digital images.” 823 F.3d at 609. Although the claims required the use of tangible components such as a cell phone and server, the Federal Circuit held the claims patent-ineligible because “the problem facing the inventor was not how to combine a camera with a cellular telephone, how to transmit images via a cellular network, or even how to append classification information to that data . . . [r]ather, the inventor sought to” create a better method for storing and tracking digital images. *Id.* at 612. Thus, the claims’ focus “was not on an improved telephone unit or an improved server.” *Id.* at 613.

The same is true in *Affinity Labs*. There, the claimed invention was a system for “streaming regional broadcast signals to cellular telephones located outside the region served by the regional broadcaster.” *Affinity Labs*, 838 F.3d at 1255. And, despite requiring the use of concrete components such as a cell phone, the Federal Circuit again held the claims patent-ineligible because they were not meant to solve a technological problem and were not “directed to an improvement in computer or network functionality.” *Id.* at 1262. Indeed, nothing in the claims was “directed to how to implement out-of-region broadcasting on a cellular phone,” and so the court concluded that the claims were “drawn to the idea itself.” *Id.* at 1258. The inventor did not set out to patent a concrete method for putting his or her idea into action. Instead, the

inventor set out to patent his or her abstract idea—out-of-region broadcasting on a cellular phone. See *id.*

But in *Diehr* and *McRO, Inc.*, claims involving abstract ideas were nonetheless patent-eligible because the claims sought to solve a problem with existing patentable technology. *Diehr*, 450 U.S. at 191–92; *McRO, Inc.*, 837 F.3d at 1316. In *Diehr*, the “claimed invention [was] a process for molding raw, uncured synthetic rubber into cured precision products” using a thermocouple to measure the mold’s internal temperature continually. 450 U.S. at 177, 178 n.3. The thermocouple did this by using a well-known mathematical formula. *Id.* at 177–78. Although the claimed method relied on this mathematical formula—an abstract idea not eligible for patent protection—the Supreme Court held the claims patent-eligible because the invention set out to solve a problem in the rubber-curing process—inconsistency in quality. *Id.* at 177–78, 192–93.

The Federal Circuit relied on similar reasoning in *McRO, Inc.* There, the claimed invention was a method for “automatically . . . producing accurate and realistic lip synchronizations and facial expressions in animated characters.” 837 F.3d at 1307. To do this, the invention used a set of rules and an algorithm. *Id.* at 1307, 1310. Although the invention relied on these mathematical formulas and concepts, the Federal Circuit held the claims patent-eligible because the invention set out to solve a problem in the 3-D animation industry—the burden of “existing, manual 3-D animation techniques.” *Id.* at 1316.

All four of these cases—*TLI Communications*, *Affinity Labs*, *Diehr* and *McRO, Inc.*—involved patent claims that incorporated abstract ideas, but the courts did not find the claimed advance in all four cases to focus on the incorporated abstract idea. In all four cases, the focus of the claimed advance over the prior art was not any one component of the claims at issue, but

instead was the problem that the claims set out to solve.⁸ Here, then, the court must ask what problem plaintiff's '795 and '085 patents set out to solve. If they aimed to solve a problem that itself is patent-ineligible—like storing the digital images at issue in TLI Communications—then plaintiff's patents are directed to patent-ineligible concepts. But if the patents set out to solve a problem that itself is patent-eligible—like improving existing 3-D animation technology in McRO, Inc.—then plaintiff's patents are directed to patent-eligible concepts and survive step one of the Alice inquiry. With this in mind, the court now turns to plaintiff's '795 and '085 patents.

Here, the focus of the '795 and '085 patents' claimed advance over the prior art is a patent-eligible concept. Like Diehr and McRO, Inc., the '795 and '085 patents set out to solve a problem that is itself patent-eligible: lack of precision in agrochemical spraying caused by the inability to control sprayer nozzles individually. '795 Patent at 1:47–50. It is indisputable that the patents achieve this—in part—by using a mathematical formula. But, neither the Complaint nor the patents themselves suggest that plaintiff set out to solve a problem with the math of agrochemical spraying. The math just happened to constitute a large part of the solution used to give users control over individual valves and nozzles in an agrochemical spraying system. And, unlike TLI Communications, the '795 and '085 patents do seek to improve the physical equipment that their claims rely on. See *supra* Part III.A (discussing the patents' claims). So, the focus of the '795 and '085 patents' claimed advance of the prior art is the ability to control each nozzle in an agrochemical spraying system individually, and not a mathematical formula.

⁸ For cases finding claims patent-ineligible, see, for example, *Genetic Techs.*, 818 F.3d at 1376 (holding claims directed to patent-ineligible concepts, stating that “the patent claim focuses on a newly discovered fact about human biology”). For cases finding claims patent-eligible, see, for example, *Enfish*, 822 F.3d at 1335–36 (“[T]he first step in the Alice inquiry in this case asks whether the focus of the claims is on the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an ‘abstract idea’ . . .”).

Because improving agrochemical spraying systems is within the realm of patentability, the '795 and '085 patents' claims are directed to patent-eligible concepts.⁹

The court recognizes “that when a claim recites a mathematical formula . . . an inquiry must be made into whether the claim is seeking patent protection for that formula in the abstract.” *Id.* at 191. After all, “a mathematical formula . . . is not afforded the protection of our patent laws, and this principle cannot be circumvented by” clever drafting. *Id.* at 191–92 (citation omitted). But, “an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.” *Mayo*, 132 S. Ct. at 1293–94 (emphasis in original) (quoting *Diehr*, 450 U.S. at 187). That is, so long as the “application” is more than “simply stat[ing] the law of nature while adding the words ‘apply it.’” *Id.* at 1294 (citing *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972)). For example, claims involving mathematical formulas may be patent-eligible if they “improve[] an existing technological process.” *Alice*, 134 S. Ct. at 2358.

Plaintiff's '795 and '085 patents use a mathematical formula to improve an existing technological process. The patents' summaries make this clear: “The present disclosure is generally directed to an improved system and method for dispensing controlled amounts of a liquid agricultural product” '795 Patent at 1:55–58; '085 Patent at 1:59–62. Before the '795 and '085 patents, no system or method existed for controlling the flow rate of individual

⁹ Defendants interpret the claimed systems and methods as ones consisting of nothing more than actions that a human being could do with pencil and paper. Doc. 19 at 14–15. Plaintiff disputes this characterization. Doc. 28 at 34–35. Although “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas,” *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (citation omitted), the Complaint and patents do not answer this potentially outcome-determinative question here. The court thus requires more evidence than it can consider at the motion to dismiss stage, and so it must deny defendants' Motion to Dismiss on this basis. E.g., *Prescriber, LLC*, 2015 WL 11170154, at *4–6 (denying a motion to dismiss, noting that more evidence was necessary, in part, to resolve the question whether the claimed system could be carried out by a human using pencil and paper); *Card Verification*, 2014 WL 4922524, at *4 (denying motion to dismiss, noting that “the question whether . . . [the claims at issue] can be performed by a human with nothing more than pen and paper poses a factual question inappropriate at the motion to dismiss stage”).

nozzles in an agrochemical spraying system. See '795 Patent at 1:41–43; '085 Patent at 1:46–48. The claimed invention uses a mathematical formula to create individual nozzle control and so applies this formula to improve the existing system and method for agrochemical spraying. The court thus concludes that the '795 and '085 patents' claims do not seek to protect a patent-ineligible concept by clever draftsmanship. On their face, the patents' claims simply apply a mathematical formula to improve an existing, patentable process—agrochemical spraying.

To be sure, parts of plaintiff's '795 and '085 patents resemble patents that courts have held patent-ineligible in cases like *Parker v. Flook*, 437 U.S. 584 (1978), and *Affinity Labs*. In those cases, courts held patents invalid under § 101, in part because the patents' claims did not explain how one should arrive at the values used in the formulas that they sought to patent. *Flook*, 437 U.S. at 586; *Affinity Labs*, 838 F.3d at 1258. Here, the '795 and '085 patents never explain how to calculate several of the claimed individual-control values. But, unlike *Flook* and *Affinity Labs*, the claims here are not directed to patenting the mathematical formula that they use. Thus, the '795 and '085 patents' failure to explain how to calculate several of the claimed individual-control values is not fatal.

In sum, based on the Complaint and the patents attached to it, the court concludes that plaintiff's '795 and '085 patents are directed to patent-eligible subject matter. Plaintiff's claims thus survive Alice step one, and so defendants' invalidity defense does not appear plainly on the face of the Complaint. The court could deny defendants' Motion to Dismiss on this basis alone. But, even if defendants were correct and the facts before the court showed that plaintiff's patents are directed to patent-ineligible subject matter, the court still would deny defendants' Motion to Dismiss at step two of the Alice test. The next section explains this conclusion.

2. Alice Step Two: Inventive Concept

In step two of the Alice test, the court determines whether the claims contain an “‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” Alice, 134 S. Ct. at 2357 (citing Mayo, 132 S. Ct. at 1294, 1298). To put it another way, the court looks to see whether the claims’ limitations—viewed as an ordered combination—“add any meaningful limitations to the abstract idea.” OIP Techs., Inc. v. Amazon.com, Inc., 788 F.3d 1359, 1364 (Fed. Cir.) (citations omitted), cert. denied, 136 S. Ct. 701 (2015). But simply reciting concrete, tangible components will not suffice to make claims patent-eligible. *In re TLI Commc’ns*, 823 F.3d at 613. “[T]he components must involve more than performance of ‘well-understood, routine, [and] conventional activities’” known in the prior art. *Id.* (quoting Alice, 134 S. Ct. at 2359). So, at step two, courts typically disregard claims that merely incorporate conventional activities that exist in the prior art. See Mayo, 132 S. Ct. at 1298 (“Purely ‘conventional or obvious’ ‘[pre]-solution activity’ is normally not sufficient to transform an unpatentable law of nature into a patent-eligible application of such a law.” (first quoting Flook, 437 U.S. at 590; then citing *Bilski v. Kappos*, 561 U.S. 593, 609–11 (2010))).

Here, the Complaint and patents suggest that many of the claims rely on prior art, but at least one important question about the prior art remains unanswered: Did individual valve control exist in the prior art? Plaintiffs contend that it did not. Defendants contend that it did. For support, defendants cite the ’795 and ’085 patents. But defendants’ citation does not support their assertion, nor does anything else in the patents or Complaint.¹⁰ To be sure, the patents state that preexisting patents “suggest controlling the application rate of the agrochemical based on

¹⁰ In their Reply, defendants argue that “individually controlled PWM valves [exist] in [the] prior art,” citing the ’795 patent at 1:41–46 for support. But, at 1:41–46, the ’795 patent does not state that individually controlled valves exist in the prior art. Instead, the patent states that the prior art “suggest[s] controlling the application rate of the agrochemical based on individual solenoid valves.” ’795 Patent at 1:41–45.

individual solenoid valves.” ’795 Patent at 1:43–45. But, no facts before the court explain what “suggest” means. E.g., *Prescriber, LLC*, 2015 WL 11170154, at *4 (denying motion to dismiss, in part, because some of the claim’s elements were not “necessarily facially recognizable as ‘well-understood, routine, conventional activities’” known in the prior art (quoting *Alice*, 134 S. Ct. at 2359)). And, at the motion to dismiss stage, the court must construe the patents and Complaint in plaintiff’s favor. Here, this standard requires the court to construe the word “suggest” to mean that individual nozzle control did not exist before the ’795 and ’085 patents, but was simply theorized in the prior art. At this stage, then, the court must conclude that individual nozzle control was not part of the PWM prior art. Improving the existing art in this fashion thus could provide the inventive step needed at step two of the *Alice* test, and so defendants’ invalidity defense does not appear plainly on the face of the Complaint and attached patents.

One more consideration keeps the court from making the *Alice* step-two determination that defendants advocate for. The parties dispute whether the court can use the claims’ preambles to construe the claims themselves. Doc. 28 at 34; Doc. 31 at 11–12. Although the court recognizes that resolving questions of claim construction “is not an inviolable prerequisite to a validity determination under § 101,” *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1349 (Fed. Cir. 2014), it is equally true that “it will ordinarily be desirable—and often necessary—to resolve claim construction disputes prior to a § 101 analysis,” *Bancorp Servs. v. Sun Life Assur. Co. of Can.*, 687 F.3d 1266, 1273 (Fed. Cir. 2012). So when, as here, the parties dispute how to construe relevant claims, the best course of action is to deny a motion to dismiss until the court properly can resolve the construction of those claims. See *Prescriber, LLC*, 2015 WL 11170154, at *5–6 (denying motion to dismiss, explaining that

determining the scope of claims allows for a more accurate invalidity determination and stating that “the extent to which the specification in fact informs interpretation of the claims and the scope of the claims is a claim construction issue better resolved prior to engaging in a § 101 analysis” (citations omitted)); cf. *Open Text S.A. v. Alfresco Software Ltd.*, No. 13-cv-04843-JD, 2014 WL 4684429, at *3 (N.D. Cal. Sept. 19, 2014) (holding that it can be appropriate to decide the validity of a patent under § 101 at the motion to dismiss stage when the parties do not dispute the proper construction of the claims at issue).

In sum, even if the claims in the '795 and '085 patents are directed to patent-ineligible subject matter, the court still would deny defendants' Motion to Dismiss at Alice step two. The face of plaintiff's Complaint and patents do not establish whether the '795 and '085 patents include an inventive concept. Thus, defendants' invalidity affirmative defense does not appear plainly on the face of the Complaint and patents, and so the court must deny defendants' Motion to Dismiss.

IV. Conclusion

The court may dispose of an invalid patent whenever procedurally appropriate. *Bascom*, 827 F.3d at 1347. But here it is not appropriate. The court thus denies defendants' Motion to Dismiss.

IT IS THEREFORE ORDERED THAT defendants' Motion to Dismiss (Doc. 18) is denied.

IT IS SO ORDERED.

Dated this 11th day of January, 2017, at Topeka, Kansas.

s/ Daniel D. Crabtree
Daniel D. Crabtree
United States District Judge