

United States Court of Appeals for the Federal Circuit

2006-1610, -1631

PAICE LLC,

Plaintiff-Cross Appellant,

v.

TOYOTA MOTOR CORPORATION,
TOYOTA MOTOR NORTH AMERICA, INC.,
and TOYOTA MOTOR SALES, U.S.A., INC.,

Defendants-Appellants.

Ruffin B. Cordell, Fish & Richardson P.C., of Washington, DC, argued for plaintiff-cross appellant. With him on the brief were Ahmed J. Davis and Scott A. Elengold. Of counsel on the brief was Robert E. Hillman, of Boston, Massachusetts.

George E. Badenoch, Kenyon & Kenyon, of New York, New York, argued for defendants-appellants. With him on the brief were John Flock and Thomas R. Makin. Of counsel on the brief was T. Cy Walker, of Washington, DC.

Appealed from: United States District Court for the Eastern District of Texas

Judge David J. Folsom

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DECIDED: October 18, 2007

Before LOURIE, RADER, and PROST, Circuit Judges.

Opinion for the court filed by Circuit Judge PROST. Opinion concurring in the result filed by Circuit Judge RADER.

PROST, Circuit Judge.

Defendants Toyota Motor Corporation, Toyota Motor North America, Inc., and Toyota Motor Sales, U.S.A., Inc. (collectively, "Toyota") appeal a judgment by the United States District Court for the Eastern District of Texas that Toyota infringed claims 11 and 39 of U.S. Patent No. 5,343,970 ("the '970 patent") owned by Paice LLC ("Paice") under the doctrine of equivalents. Paice LLC v. Toyota Motors Corp., No. 2:04-CV-211 (E.D. Tex. Aug. 16, 2006). Paice cross-appeals the district court's

judgment that Toyota did not literally infringe claims 11 and 39 of the '970 patent, claim 15 of the U.S. Patent No. 6,209,672 ("the '672 patent"), and claims 1 and 2 of U.S. Patent No. 6,554,088 ("the '088 patent").¹ Paice also appeals the district court's imposition of an ongoing royalty arrangement that allows Toyota to continue practicing the invention of the '970 patent in exchange for a set royalty payment. For the reasons explained below, we affirm-in-part, vacate-in-part, and remand for further proceedings.

I. BACKGROUND

A. Patents in Suit

The three patents at issue in this case relate to drive trains for hybrid electric vehicles. In a conventional automobile, the wheels are driven using torque (rotational force) supplied only by an internal combustion engine ("ICE" or "engine"). In hybrid electric vehicles, on the other hand, the wheels are driven using torque supplied by an ICE, an electric motor, or a combination of the two. This adds an additional layer of complexity because the relative torque contributions of the ICE and the electric motor must be combined and controlled.

To that end, the drive train disclosed in the '970 patent employs a microprocessor and a controllable torque transfer unit ("CTTU") that accepts torque input from both the ICE and the electric motor:

¹ The '088 patent is a continuation in part of the '672 patent. In the proceedings below, the parties treated the disclosures of the '672 patent and the '088 patents as being the same. Appellants' Br. 15. Thus, for the sake of simplicity, we will refer primarily to the relevant portions of the '672 patent and omit any parallel citations to the '088 patent.

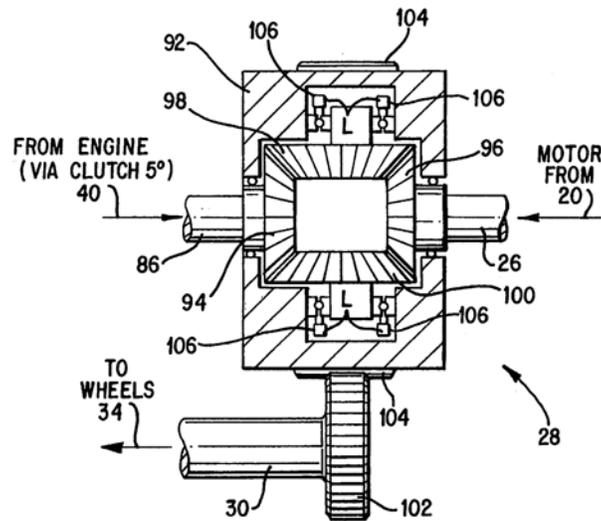


FIG. 11

As shown in figure 11 of the '970 patent, illustrated above, the ICE output shaft 86 and the electric motor output shaft 26 extend into the CTTU housing 92 and terminate at bevel gears 94 and 96, respectively, each of which mesh with two other bevel gears, 98 and 100.

In this embodiment, bevel gears 98 and 100 are equipped with microprocessor-controlled locking devices 106 for setting the gears' rotational freedom, if any, relative to the housing. '970 patent, col. 15, ll. 50-53. In one mode of operation the microprocessor locks the bevel gears, causing the housing and the drive shaft 30 to rotate about their horizontal axes in response to any torque provided by the output shafts of the ICE or electric motor (or both). Id. at col. 15, l. 64—col. 16, l. 3. In this “locked” mode of operation, the two shafts rotate at the same speed, although the amount of torque provided by the individual shafts may differ. See id. The CTTU's microprocessor, by virtue of its ability to control the amount of torque provided at each shaft, is able to control the relative amounts of torque transferred from the ICE and the

electric motor to the drive shaft. See id. at col. 10, ll. 4-43. The microprocessor is able to do so by holding the inputs constant and merely sending control signals to the locking devices. For example, if the ICE is disengaged (and not providing any torque) while the bevel gears are locked, there is a one-to-one transfer of torque from the electric motor output shaft, through the CTTU, to the drive shaft. J.A. 1494. In another mode of operation (“differential mode”), however, the microprocessor releases the bevel gears such that they are free to rotate. ’970 patent, col. 16, ll. 11-27. If the ICE is disengaged in this mode, there is a one-to-two transfer of torque from the motor output shaft, through the CTTU, to the drive shaft. J.A. 1494.

Claims 11 and 39 of the ’970 patent are relevant to this appeal. Because claim 39 depends from claim 32, and because the issues we must decide do not implicate the additional limitation of claim 39, only claims 11 and 32 are reproduced below:

11. A hybrid electric vehicle, comprising:

two or more drive wheels receiving torque for propelling said vehicle from an output shaft, and a power unit supplying drive torque to said output shaft, said power unit comprising:

a controllable torque transfer unit adapted to receive torque from two sources and transfer said torque to said output shaft;

an engine adapted to consume combustible fuel and supply torque to said torque transfer unit;

an AC electric motor adapted to receive electric energy from a battery and supply torque to said torque transfer unit, said motor being further adapted to be operable as a generator;

a battery for supply of stored electric energy to said motor, and for receiving and storing electric energy from said motor when operated as a generator;

solid state switching means for converting DC supplied by said battery to AC for supply to said electric motor, and for rectifying AC generated by

said motor when operated in a regenerative mode to provide DC to charge said battery; and

a controller for controlling the operation of said engine, said electric motor, said solid state switching means, and said torque transfer unit, such that said torque transfer unit receives torque from either or both of said internal combustion engine and said electric motor and transmits torque therefrom to said drive wheels by way of said output shaft, and for controlling the relative contributions of the internal combustion engine and electric motor to the torque driving the wheels.

'970 patent, col. 23, ll. 36-68 (emphasis added).

32. A hybrid electric vehicle, comprising:

a controllable torque transfer unit, operable to transfer torque in three modes: (a) from either or both of two input shafts to an output member, said output member transmitting torque to drive wheels of said vehicle; (b) between said input shafts; and (c) from said output member to one or both of said input shafts;

an electric motor adapted to apply torque to a first of said input shafts responsive to supplied electrical energy, said motor further being operable in a generator mode, to provide electrical energy when driven by torque transferred thereto via said first input shaft;

a combustible-fuel-burning internal combustion engine adapted to apply torque to a second of said input shafts;

a battery adapted to supply electrical energy to and store energy received from said electric motor; and

a controller adapted to receive input commands from a driver of said vehicle to monitor operation of said vehicle and to control operation of said controllable torque transfer unit, said motor, and said internal combustion engine, wherein said controller comprises means for performing the following functions responsive to input commands and monitored operation of said vehicle:

selecting an appropriate mode of operation of said vehicle from at least the following possible modes of operation:

low speed running;
steady state running;
acceleration or hill climbing;
battery charging;

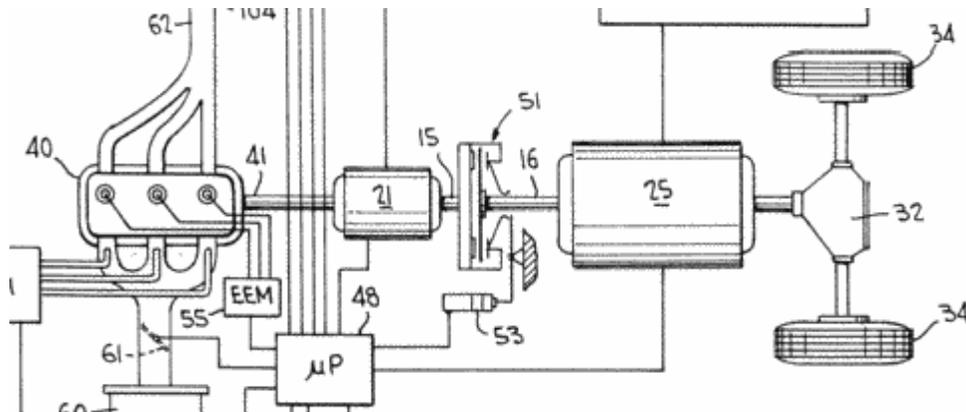
braking; and
engine starting;

selecting the appropriate flow paths of electrical energy and/or combustible fuel and of torque to effectuate the selected mode of operation; and

controlling operation of said controllable torque transfer unit, said electric motor and said internal combustion engine in accordance with said selected appropriate flow paths and selected mode of operation.

Id. at col. 26, l. 39–col. 27, l. 15 (emphasis added).

The drive train of the '672 and '088 patents differs from the drive train of the '970 patent in that it employs a clutch—rather than a CTTU—to combine the torque contributions from the ICE and the electric motor. As illustrated in figure 3 of the '672 patent (illustrated below), torque from electric motor 25 is directly transferred to differential 32 (and therefore to the wheels 34). Torque from ICE 40, on the other hand, is only indirectly transferred to the wheels because output shaft 41 of the ICE is routed through clutch 51.



Consequently, when the clutch is disengaged, the electric motor is the sole source of torque transferred to the wheels. When the clutch is engaged, however, torque provided by both the ICE and the electric motor is transferred to the wheels. Another

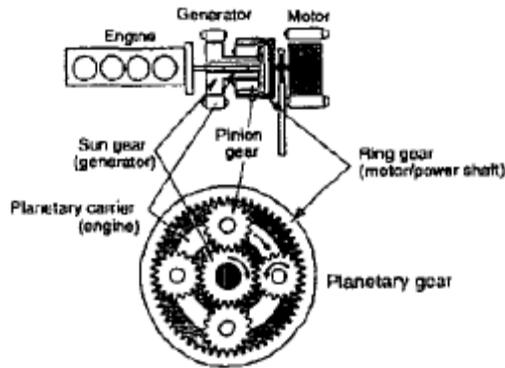
difference from the drive train of the '970 patent is that the drive train of the '672 and '088 patents use “road load” to determine the proper combination of torque from the ICE and the electric motor.²

B. Accused Devices

At issue in this appeal are hybrid electric vehicles sold by Toyota. Toyota's first commercial hybrid electric vehicle, the “Prius I,” was sold in Japan beginning in 1997 and in the United States beginning in 2000. In 2003, Toyota began marketing a newer model, the “Prius II.” The drive train (or “transaxle unit”) of the Prius II—which is also present in another form in the Toyota Highlander and Lexus RX 400h³—is similar to the drive trains described in all three patents in suit in the sense that it, too, combines torque from an ICE with torque from an electric motor (“MG2” or “the traction motor”). However, instead of combining these torques using the '970 patent's lockable bevel gears or the '672 and '088 patents' clutch, Toyota's drive train is designed around a “planetary gear unit” (or “power-splitting device”), having a central “sun” gear that meshes with several “planetary” gears (supported by a “planetary carrier”), which in turn mesh with a peripheral ring gear:

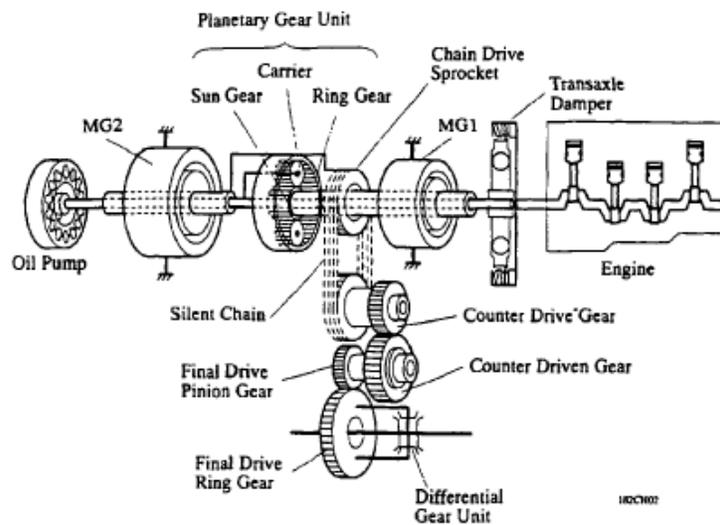
² Road load, expressed as a percentage of the ICE's maximum torque output, is simply the amount of torque required to propel the vehicle at any give time.

³ The drive trains of the Toyota Highlander and the Lexus RX 400h do differ somewhat from the drive train of the Prius II. However, those differences are not relevant to the issues on appeal.



J.A. 4629.

As may be appreciated from the following depiction of Toyota's drive train, the output shaft from the ICE is connected to the planetary carrier (and thus to the planetary gears), whereas the output shaft from MG2 is connected to the ring gear. The Toyota design also employs an additional motor/generator ("MG1") having an output shaft connected to the sun gear.



J.A. 12788.

As with the microprocessor in the '970 drive train, a microprocessor associated with Toyota's drive train is able to control the amount of torque provided by both the ICE and MG2. J.A. 1577. Unlike the transfer of torque through the CTTU described in the

'970 patent, however, the transfer of torque through Toyota's planetary gear unit cannot be varied; 72% of the torque provided by the ICE to the planetary carrier is always transferred to the ring gear.⁴ J.A. 1497. That fraction of the ICE torque is then combined with 100% of the torque provided by MG2. J.A. 1505. As such, Toyota's microprocessor is only able to vary the amount of torque output to the drive shaft by varying the ICE and/or MG2 torque inputs; holding those inputs constant results in a constant torque output. J.A. 1577.

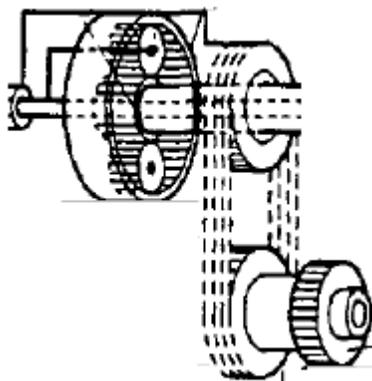
II. DISTRICT COURT PROCEEDINGS

Paice initiated the instant action against Toyota on June 8, 2004, by filing a complaint in the United States District Court for the Eastern District of Texas alleging three counts of infringement—one count for each patent in suit—and requesting, inter alia, compensatory damages and a permanent injunction. On September 28, 2005, the district court issued a written opinion construing dozens of disputed claim terms. Paice LLC v. Toyota Motor Corp., No. 2:04-CV-211 (E.D. Tex. Sept. 28, 2005) (“Claim Construction Opinion”). Of primary importance to the issues on appeal is the court's construction of “controllable torque transfer unit” (the CTTU limitation) as “a multi-input device or component that is controlled to transfer variable amounts of torque.” Id. slip op. at 17.

On December 6, 2005, the district court commenced a ten-day jury trial during which both sides presented extensive evidence. Paice's theory of the case, put before the jury largely through the expert testimony of Dr. Steven Nichols, was that the

⁴ The remaining 28% is always transferred to the sun gear.

planetary gear unit, the chain/sprocket arrangement, and the shaft leading to the counter drive gear of Toyota's drive train satisfies the CTTU limitation.



See J.A. 1256,⁵ 12788. In particular, Dr. Nichols stated that the structure is (1) “a multi-input device or component”—it accepts inputs at the planetary carrier from the ICE output shaft and at the ring gear from the MG2 output shaft; (2) “that is controlled to transfer variable amounts of torque”—the microprocessor dictates the amount of torque sent from each input, and ultimately output to the drive shaft. See, e.g., J.A. 1201-03.

Toyota offered its own theory to the jury, largely through the expert testimony of Dr. Edward Caulfield. According to Dr. Caulfield, Toyota's planetary gear unit only accepts torque input from the ICE. Seventy-two percent of that input torque is then output to the ring gear. The combination of the fractional (72%) ICE torque with the torque from MG2 does not occur until after the fractional ICE torque is output from the planetary gear unit to the ring gear. Therefore, Dr. Caulfield's opinion was that Toyota's

⁵ Q. [By Mr. Badenoch on cross] So, what you call the controllable torque transfer unit are these components, that planetary, and in effect it's the drive sprocket on that shaft going down to the other gear on the end of the drive sprocket, that's the controllable torque transfer unit in Toyota?

A. [By Dr. Nichols] Yes.

J.A. 1256.

drive train does not satisfy the district court's construction because there is no single "device or component" that can be characterized as "multi-input." See J.A. 1497-98.⁶ Dr. Caulfield further testified that Toyota's drive train does not satisfy the CTTU limitation because the flow of torque through the planetary gear unit cannot be altered from the 72/28 split discussed above, and therefore, cannot be "controlled to transfer variable amounts of torque." J.A. 1505-06.

At the end of the evidentiary presentation, the case was submitted to the jury. The jury concluded that Toyota's drive train lacks a literal CTTU, but infringes claims 11 and 39 of the '970 patent under the doctrine of equivalents, see J.A. 4394; the jury found no infringement of the other asserted claims. Based on those findings, the jury awarded \$4,269,950.00 to Paice as a reasonable royalty.

⁶ Q. [By Mr. Badenoch on direct] When you say . . . summing at the ring and not across the physical device, what do you mean by that?

A. [By Dr. Caulfield] I would look at the ring as not a device, it's a part. A ring can be compared to a shaft. There's no difference between this shaft here, if we made it a foot long either way of exactly where it hits that particular planetary output. The results would be the same.

So, Mr. Cordell [through the testimony of Dr. Nichols], . . . is making his sum point where the two roads come together on literally the ring, which is a shaft. So, he's summing into a physical part.

Now, no two ways about it. The planetary is a device. That green model [of the planetary gear unit] I have there is a device. In engineering you would call it a machine. It does basically split the torque. A torque coming into the carrier is sent out through the sun and then out through the ring. There's splitting going on there. But that's a device where he's trying to sum is on a physical part, just a solid member.

. . . .

It's very similar if I were to take two motors, tie them with two chains to the same shaft. That's—the shaft is doing the summing, not the device.

J.A. 1497-98 (emphases added).

On January 20, 2006, Toyota filed a motion for judgment as a matter of law (“JMOL”) seeking to overturn the jury’s limited finding of infringement. Paice filed its own motion for JMOL, seeking to overturn the jury’s finding of no literal infringement with respect to claims 11 and 39 of the ’970 patent, claim 15 of the ’672 patent, and claims 1 and 2 of the ’088 patent. The court denied both motions.

Paice also moved for a permanent injunction to prevent Toyota from making, using, offering for sale, and selling within the United States the accused vehicles. In addressing that motion, the district court followed the traditional four-factor test mandated by the Supreme Court’s recent decision in eBay Inc. v. MercExchange, L.L.C., 126 S. Ct. 1837, 1839 (2006) (“A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.”). With respect to irreparable injury, Paice argued that the absence of an injunction would have an adverse effect on its ability to license the patented technology. The court rejected this argument, however, noting that Paice had only adduced vague testimony that the company was “sidelined” in its business dealings during litigation. Paice LLC v. Toyota Motors Corp., No. 2:04-CV-211, Docket No. 227, slip op. at 8 (E.D. Tex. Aug. 16, 2006). The court also pointed to evidence in the record suggesting that Paice’s inability to reach an agreement with Chrysler, for example, was due to public misrepresentations Paice allegedly made about its relationship with Chrysler, and was not due to the absence of an injunction. Id. Moreover, since Paice does not actually

manufacture any goods, the court concluded that there was no threat that Paice would lose name recognition or market share without an injunction. Id. slip op. at 9.

Intertwined with its consideration of irreparable injury was the court's analysis of the adequacy of monetary damages. Given the relatively small reasonable royalty awarded by the jury—which amounted to approximately \$25 per accused vehicle—in comparison to the overall value of the vehicles, the court concluded that monetary damages would suffice. Id. The adequacy of monetary damages was further bolstered, in the court's opinion, by the fact that Paice had offered a license to Toyota during the post-trial period. Id. slip op. at 9-10.

With regard to the balance of hardships, Paice contended that it “faces extinction” without an injunction, whereas Toyota would suffer “only minor economic losses.” This contention was rejected by the court because, in its view, an injunction against Toyota (1) would disrupt “related business, such as dealers and suppliers;” (2) could have an adverse effect on the “burgeoning hybrid market;” and (3) might damage Toyota's reputation. Id. slip op. at 10. The court further concluded that Paice's “extinction” argument was unsound because it was based on the rejected premise that “only injunctive relief [of the type requested] will lead to a successful licensing program.” Consequently, the court held that the balance of hardships favored Toyota. Id. Lastly, the court determined that the public interest favored neither party. Id. Accordingly, the court denied Paice's motion for a permanent injunction. Id. slip op. at 11. However, rather than leaving the parties to their own devices with respect to any future acts of infringement, the court imposed an “ongoing royalty” of \$25 per Prius II, Toyota Highlander, or Lexus RX400h vehicle sold by Toyota during the remaining life of the

patent and entered final judgment. Paice LLC v. Toyota Motors Corp., No. 2:04-CV-211, Docket No. 228, slip op. at 2 (E.D. Tex. Aug. 16, 2006).

Toyota appeals the denial of its JMOL motion, and Paice cross-appeals both the denial of its JMOL motion, as well as the “ongoing royalty” imposed by the district court.⁷ We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

III. STANDARD OF REVIEW

Federal Rule of Civil Procedure 50(a)(1) provides that a court may grant a motion for JMOL only where “there is no legally sufficient evidentiary basis for a reasonable jury to find for [the non-movant].” “We review the district court's denial of a motion for JMOL without deference, applying the same standard employed by the district court.” Honeywell, Int’l Inc. v. Hamilton Sundstrand Corp., 370 F.3d 1131, 1139 (Fed. Cir. 2004) (en banc). “Under this standard, we can reverse a denial of a motion for JMOL only if the jury’s factual findings are not supported by substantial evidence or if the legal conclusions implied from the jury’s verdict cannot in law be supported by those findings.” Cybor Corp. v. FAS Techs., 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc).

“The decision to grant or deny permanent injunctive relief is an act of equitable discretion by the district court, reviewable on appeal for abuse of discretion.” eBay, 126 S. Ct. at 1839.

⁷ The district court’s refusal to enjoin Toyota altogether is not raised in Paice’s cross appeal. Appellee’s Br. 62 n.3.

IV. DISCUSSION

A. Toyota's Appeal

We first address the issues raised in Toyota's appeal of the district court's denial of the motion for JMOL of noninfringement of claims 11 and 39 of the '970 patent. According to Toyota, the jury's finding of infringement of those claims under the doctrine of equivalents must be overturned for three reasons. We disagree.

1. Sufficiency of the Evidence

First, Toyota argues that the expert testimony of Dr. Nichols was legally insufficient to support a finding of infringement under the doctrine of equivalents. Although Dr. Nichols testified before the jury for a day and a half, Toyota claims that the vast majority of his testimony was directed to literal infringement. Specifically, Toyota argues that Dr. Nichols explicitly marked the end of his extensive literal infringement testimony by answering in the affirmative when asked whether "[t]he opinion that [he had] expressed thus far . . . relate[d] to literal infringement." J.A. 1218. Immediately thereafter, Toyota contends, Dr. Nichols explicitly transitioned to his equivalence testimony by again answering in the affirmative when asked whether he had "also formed an opinion with respect to the Doctrine of Equivalents." Id.

Following his answer to that question, the following brief exchange took place before the jury between counsel for Paice and Dr. Nichols:

Q. So, assuming that the controllable torque transfer unit is not literally infringed, have you found that . . . the accused vehicles satisfy this limitation under the doctrine of equivalents?

A. Yes. It is my opinion that they do.

Q. [C]ould you describe that for us by reference to the slide that we see on the screen, Slide 71?

A. Well, this particular slide is the Doctrine of Equivalents analysis for the controllable torque transfer unit. I will say that I do believe that it is literally there. However, it provides the function that is to be provided. It provides controllable and variable amounts of torque from two sources to the drive wheels, and I believe that's consistent with the claim construction of the Court.

The way in which it does that is it controls a set of gears to receive torque from two input shafts and transfer torque to the drive wheels.

Q. And what's the result?

A. The results are control—that the vehicles control to direct torque flow between the motor, the engine and the drive

Id. The "Slide 71" referenced by counsel for Paice contained a grid with three rows, with one row corresponding the function of the CTTU, one row corresponding to the way in which the CTTU performed that function, and one row corresponding to the result the CTTU achieved; and two columns, one corresponding to the '970 patent and the other corresponding to the "Accused Toyota Vehicles." In each of the grid's six boxes, a red check mark indicated the presence of the function/way/result in both the CTTU and the "Accused Toyota Vehicles." This, Toyota says, was the extent of Dr. Nichols's testimony on the subject.

We have stated that "a patentee must . . . provide particularized testimony and linking argument . . . with respect to the function, way, result test when such evidence is presented to support a finding of infringement under the doctrine of equivalents." Tex. Inst. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1567 (Fed. Cir. 1996) (emphasis added). "Generalized testimony as to the overall similarity between the claims and the accused infringer's product or process will not suffice." Id. Under this standard, Dr. Nichols's testimony was plainly sufficient. A careful review of the entire transcript from that portion of the trial evinces that the bulk of Dr. Nichols's testimony was not limited to

literal infringement. While it is true that the excerpts pointed to by Toyota ostensibly draw a figurative line in the sand separating testimony concerning literal infringement from that concerning equivalence, we do not read Dr. Nichols's testimony to say that every word he uttered from the time he took the stand until the moment he transitioned to the doctrine of equivalents related only to literal infringement. Rather, Dr. Nichols gave a substantial amount of testimony—occupying over seventy pages of transcript—concerning the technology disclosed in the patents and the inner workings of the accused vehicles' transaxle units before he even discussed the topic of infringement at all:

Q. Now, Dr. Nichols, now that we've discussed some of the components in the patents, could we turn to your infringement analysis.⁸

A. Yes.

J.A. 1212. It was with his answer to this question that Dr. Nichols indicated to the jury that his infringement testimony was officially beginning. And it was to this starting point that Dr. Nichols was referring a short time later when he answered in the affirmative to the question, “[t]he opinion that you’ve expressed thus far, does that relate to literal infringement?” J.A. 1218.

Another infirmity in Toyota's argument is that, even if we were to agree that Dr. Nichols did in fact draw some sort of line in the sand with his answer to that question, in so doing he did not thereby render his literal infringement analysis irrelevant to his subsequent equivalence analysis. Our “particularized testimony” standard does not

⁸ Although counsel for Paice arguably characterized the testimony to that point as relating only to “some of the components in the patents,” Dr. Nichols had by that time extensively discussed the accused transaxle units.

require Dr. Nichols to re-start his testimony at square one when transitioning to a doctrine of equivalents analysis. Indeed, we think it desirable for a witness to incorporate earlier testimony in order to avoid duplication. The fact that Dr. Nichols did not explicitly do so does not mean he did not implicitly incorporate his earlier testimony. Thus, we reject any notion that Dr. Nichols's equivalence testimony is strictly limited to the few lines pointed to by Toyota.

Toyota also argues that Dr. Nichols's other testimony cannot be used to support the jury's verdict due to the absence of any "linking argument" to tie such testimony to the function/way/result analysis of the CTTU. Again, we find Toyota's characterization of Dr. Nichols's testimony inaccurate. For example, on the morning of December 8, 2005, and before he turned to his literal infringement analysis, Dr. Nichols demonstrated the operation of an actual accused vehicle's transaxle unit to the jury, and in so doing he explained:

Q. Okay. And when you say its input, what is it that you're talking about as being input, Dr. Nichols?

A. We have torque input from the engine, torque input from MG2, combined torque output to the drive wheels, controllably combined to give you variable torque on the output to drive the wheels.

J.A. 1201 (emphases added). Later that same morning, referring to Slide 71, Dr. Nichols explained to the jury that the accused vehicles' transaxle units "provide[] the function that is to be provided," i.e., "controllable and variable amounts of torque from two sources to the drive wheels." J.A. 1218 (emphases added). Thus, within a close proximity of time, Dr. Nichols first demonstrated and explained operation of an actual accused device to the jury, and then linked that demonstration and explanation to the

function of the CTTU. Our review of the record reveals that Dr. Nichols's testimony was similarly sufficient with respect to linking the way and result prongs.

Nonetheless, Toyota criticizes Dr. Nichols for allegedly failing to identify any specific structure in the accused vehicles' transaxle units corresponding to the CTTU. In particular, Toyota claims that Paice's equivalence argument is supported by nothing more than Dr. Nichols's "[g]eneralized testimony as to the overall similarity between the claims and the accused infringer's product." See Appellants' Br. 37-38 (quoting Tex. Inst., 90 F.3d at 1567). This argument is specious in light of the fact that counsel for Toyota spent a substantial portion of his time on cross examination asking Dr. Nichols to help draw a box on a diagram around the exact portion of Toyota's drive train he identified as corresponding to the CTTU. See J.A. 1256. To now suggest on appeal that the jury was never shown specific structure is simply incorrect. Compare Appellants' Br. 38 ("Indeed, Dr. Nichols was never asked at trial to identify any alleged equivalent structure in connection with his equivalents analysis."), with J.A. 1256 (Questions by Mr. Badenoch: "Exactly what portion—what device in this diagram of the Toyota Prius transaxle schematic, what are you [Dr. Nichols] calling now the controllable torque transfer unit in your opinion?" and "Can you [Dr. Nichols] just go over that one more time so that I can draw a box to make sure I've got it right?").

Toyota also argues that Dr. Nichols "fail[ed] to acknowledge any differences between the CTTU claim limitation and any component or components alleged to be equivalent" in order to "explain why and how such differences are insubstantial." Appellants' Br. 41. We are unaware of any such "acknowledgement" requirement in the context of the function/way/result test, and Toyota does not cite any case law standing

therefor. In any case, Dr. Nichols was called as a rebuttal witness to answer Dr. Caulfield's testimony. With respect to the question of whether Toyota's accused CTTU is "multi-input device or component," Dr. Nichols testified:

Q. Now, Dr. Nichols, did you also hear Dr. Caulfield testify yesterday about where the torque from MG2, I'll say intersects the ring gear and where is it, in your understanding, that Dr. Caulfield said that takes place?

. . . .

A. If I understand him correctly, he takes the position that—well, actually this plus this plus other elements are all one shaft and as a result it is not an input; it's sort of an input/output flowby and there is no input shaft in MG2. If I understand his testimony.

Q. Do you agree with this testimony, Dr. Nichols?

A. Well, it's certainly a novel approach.

Q. And what is it you mean by a novel approach?

A. It's not true.

Q. So, you do not agree with it?

A. No. . . . This is a ring gear. Without this, the planetary gear unit does not exist. It's not a ring gear shaft, a shaft ring gear. It's a ring gear.

Q. Thank you.

A. I will add one other thing. If, in fact, it does flow on the outside somehow, which it does not, this is not a dumb device. This would be a very smart device that somehow would have torque flow around the outside of a ring gear which is not a ring gear but a shaft. It simply does not make sense to me.

Trial Tr. 141:18–143:4, December 16, 2005.

And with respect to the question of whether Toyota's accused CTTU is "controlled to transfer variable amounts of torque," Dr. Nichols testified:

Q. We heard a lot of testimony about the 72 percent/28 percent torque split within the planetary gear unit. I just want to confirm it. Do you agree or disagree that the torque split always occurs in the planetary gear unit?

A. Yes. It's steady state, that's the torque split and it's been consistent on four or five or six people giving testimony. We all agree on that split of steady state.

. . . .

Q. And yet you still have reached the conclusion that you've reached, Dr. Nichols, regarding whether the planetary gear unit in the Toyota accused vehicles is a controllable torque transfer unit?

A. Yes.

Q. And how have you reached that in light of the fact that there is a fixed split within the ring gear itself?

A. Well, . . . I believe everyone that's given testimony has agreed that it—the [MG2] can provide power independently through the . . . planetary gear unit, although there may be some arguments whether it's through or somehow around the planetary gear unit. Everyone's agreed, and the engine can provide it and then provide it in different combinations.

Trial Tr. 145:13–146:18, Dec. 16, 2005.

This rebuttal testimony, in conjunction with the testimony given during each side's case in chief, provided the jury with an ample basis upon which to evaluate the insubstantiality of the differences between the CTTU limitation and the accused structure.

2. Criticism of Prior Art

The second reason Toyota contends that the jury's equivalence verdict cannot stand relates to Paice's criticism of two patents issued to Berman et al. and assigned to TRW, Inc.: U.S. Patent Nos. 3,566,717 ("the '717 patent") and 3,732,751 ("the '751

patent”) (collectively, “Berman/TRW”).⁹ Both Berman/TRW patents describe a hybrid drive train similar to those in the accused vehicles in that the Berman/TRW drive train design employs an ICE, a traction motor, and a generator coupled to a planetary gear unit. See '751 patent, col. 2, l. 48–col. 3, l. 9. However, unlike Toyota’s drive train, the Berman/TRW drive train has two operator-selectable modes of operation, one being designed for lower speeds and the other being designed for higher speeds. See, e.g., id. at col. 4, ll. 48-62. Although the Berman/TRW design employs various controllers containing transistors and other electronic circuitry, see id. at figs. 4-5, there is no controlling microprocessor choosing the most appropriate mode of operation. J.A. 1255.

The written description of the '970 patent describes the Berman/TRW design as providing “[a] more promising ‘parallel hybrid’ approach” than other prior art, '970 patent, col. 2, l. 67–col. 3, l. 1, but it nevertheless points to disadvantages of the Berman/TRW design compared to the '970 invention:

The present invention relates to such a parallel hybrid vehicle, but addresses certain substantial deficiencies of the Berman et al design. For example, Berman et al show two separate electric motor/generators powered by the internal combustion engine to charge batteries and to drive the vehicle forward in traffic. This arrangement is a source of additional complexity, cost and difficulty, as two separate modes of engine control are required, and the operator must control the transition between the several modes of operation. Further the gear train shown by Berman

⁹ The '751 patent is a continuation in part of the '717 patent. Aside from the addition of a few alternate embodiments in the '751 patent, see col. 17, ll. 10-52 (discussing embodiments not relevant here), the written descriptions of these two patents appear more-or-less identical. For simplicity, when we refer to the shared written description, we cite only to the '751 patent.

et al appears to be quite complex and difficult to manufacture economically.¹⁰

Id. at col. 3, ll. 16-27 (emphases added). Given this criticism and disavowal of Berman/TRW in the written description, Toyota argues that its drive trains—which are allegedly “based on the configuration of the prior art Berman/TRW patents”—cannot be captured by Paice’s invocation of the doctrine of equivalents.

This court has addressed the effects of criticism and disavowal in several cases. For example, in SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., the technology at issue related to “[b]alloon dilatation catheters . . . used in coronary angioplasty procedures to remove restrictions in coronary arteries.” 242 F.3d 1337, 1339 (Fed. Cir. 2001). Such catheters were made in one of two configurations: “the dual (or adjacent) lumen configuration,” or “the coaxial lumen configuration.” Id. The question on appeal was whether the claims—which merely specified that the two lumens be “separate”—were limited in scope, either literally or under the doctrine of equivalents, to the coaxial lumen configuration. Analyzing the claim language in light of the written description, we held, inter alia, that the patentee had “distinguish[ed] the prior art on the basis of the use of dual lumens and [had] point[ed] out the advantages of the coaxial lumens used in the catheters that [were] the subjects of the [patents in suit].” Id. at 1343. We read this as “support[ing]” the “conclusion that the claims should not be read so broadly as to encompass the distinguished prior art structure.” Id. We further explained that the “most compelling portion of the specification” was the

¹⁰ The '970 patent also distinguishes Berman/TRW on the basis that “one or even two variable-speed transmissions may be required.” '970 patent, col. 3, ll. 28-30. Toyota does not point to that distinction as relevant to this appeal. See Appellants’ Br. 51.

patentee's statement that the coaxial configuration "is 'the basic sleeve structure for all embodiments of the present invention contemplated and disclosed herein.'" Id. at 1344 (quoting the written description). We were thus led "to the inescapable conclusion" that the "separate" limitation was literally limited in scope to the coaxial configuration. Id. at 1342.

Relying again on the patentee's criticism of the prior art and the "all embodiments" statement, we arrived at the same conclusion with respect to equivalent claim scope. However, our analysis turned on a narrower rationale:

The principle articulated in [several cited] cases is akin to the familiar rule that the doctrine of equivalents cannot be employed in a manner that wholly vitiates a claim limitation. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., [520 U.S. 17, 29-30 (1997)]; Athletic Alternatives, [Inc. v. Prince Mfg., Inc.], 73 F.3d 1573, 1582 (Fed. Cir. 1996)] ("specific exclusion" principle is "a corollary to the 'all limitations' rule"). Thus, if a patent states that the claimed device must be "non-metallic," the patentee cannot assert the patent against a metallic device on the ground that a metallic device is equivalent to a non-metallic device. The unavailability of the doctrine of equivalents could be explained either as the product of an impermissible vitiation of the "non-metallic" claim limitation, or as the product of a clear and binding statement to the public that metallic structures are excluded from the protection of the patent. [T]he foreclosure of reliance on the doctrine of equivalents in such a case depends on whether the patent clearly excludes the asserted equivalent structure, either implicitly or explicitly.

Id. at 1346-47. Thus, because the patentee had "clearly exclude[d]" one of only two possible structures, "competitors and the public were free to draw the reasonable conclusion that the patentee was not seeking patent protection for catheters that used a dual lumen configuration." Id. at 1347.

This court was confronted with a similar fact pattern in Gaus v. Conair Corp., where the technology at issue related to "a safety mechanism that prevents fatal shocks to users of electrical appliances such as hairdryers" due to immersion of the appliance

in water. 363 F.3d 1284, 1285 (Fed. Cir. 2004). In particular, the safety mechanism of the patented invention employed protective circuitry designed to detect the invasion of water before any such water could reach the voltage-carrying components of the appliance itself. Id. at 1289. The safety mechanism of the accused appliance, however, would not react until water reached the voltage-carrying components of the appliance. Id. at 1290. This would result in the user experiencing a brief, but non-fatal shock. Id. Ironically, we noted, “one of the principal advantages of the claimed invention [over the prior art]” touted in the patent’s specification was the invention’s ability to “protect[] the user from such a shock.” Id. at 1289. Thus, we held that the patentee’s criticism of this prior art characteristic amounted to a surrender of claim scope that the patentee could not “reclaim . . . by invoking the doctrine of equivalents.” Id. at 1291; see also Dawn Equip. Co. v. Ky. Farms Inc., 140 F.3d 1009, 1016 (Fed. Cir. 1998) (holding that statements in the written description touting the ability of the patented invention to overcome disadvantages in the prior art “strongly suggest, if not mandate, judgment in [the defendant’s favor]” where the accused products suffered the very same disadvantages).

In this case, Toyota analogizes the '970 patent’s criticism of the Berman/TRW design to the criticism of prior art discussed in SciMed, Gaus, and Dawn Equipment. We disagree. As the written description of the '970 patent reveals, the primary disadvantage of the Berman/TRW design is its control system, which relies upon a human operator to select the mode of operation. '970 patent, col. 3, ll. 24-25 (“[T]he operator must control the transition between the several modes of operation.”). Paice overcame this disadvantage by using a microprocessor to determine the most

appropriate mode of operation based on its monitoring of control inputs from the driver, as well as several other variables. Id. at col. 6, ll. 19-26. Toyota's drive trains use a microprocessor in the same manner as the '970 patent, i.e., the microprocessor determines the most appropriate mode of operation based on its monitoring of control inputs from the driver, as well as several other variables. J.A. 1225. Therefore, the '970 patent's discussion of the Berman/TRW design's disadvantages does not preclude the application of the doctrine of equivalents to Toyota's accused transaxle units.

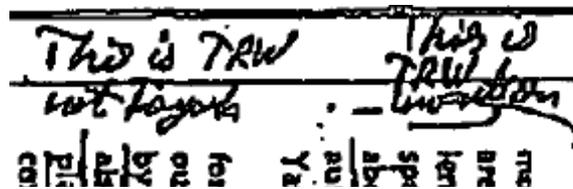
To be sure, the written description of the '970 patent does point out that the Berman/TRW "gear train . . . appears to be quite complex and difficult to manufacture economically." Col. 3, ll. 26-27. However, to the extent Paice drew a distinction between its design and the Berman/TRW design, the distinction is clearly secondary and equivocal at best. Moreover, it is far from obvious which portion of the gear train is supposed to be "quite complex and difficult to manufacture economically." Paice may have been referring to the arrangement of the motors, engine, and planetary gear set, or to the control system described in the Berman/TRW patents. The intrinsic evidence simply does not provide any resolution to this ambiguity. Consequently, this is not a case like SciMed where the patentee selected one configuration for "all embodiments" of the invention to the exclusion of the only other known configuration. Nor is this a case like Gaus or Dawn Equipment where the patentee touted the invention's improvements over the very same subject matter sought to be recaptured under the doctrine of equivalents. Thus, we find nothing in the written description of the '970 patent that amounts to a disavowal sufficient to overturn the jury's finding of infringement.

In spite of the above-mentioned differences between the Berman/TRW design and Toyota's design, Toyota argues that Paice is bound by various statements it made equating the Berman/TRW design to Toyota's design. According to Toyota, Paice's disavowal of the Berman/TRW design relative to the limitations of the '970 claims acts as a disavowal of Toyota's accused transaxle units. In the written description of the '672 patent, Paice distinguished Toyota's Prius I transaxle unit (which also uses a planetary gear unit to combine torque):

Various articles describe several generations of Toyota Motor Company hybrid vehicles, stated soon to be available commercially. . . . Toyota describes this vehicle as a "series-parallel hybrid"; regardless of the label applied, its powertrain appears to be similar to that of the Berman patents described above, that is, torque from either or both of an internal combustion engine and an electric motor are controllably combined in a "power-split mechanism" and transmitted to the drive wheels through a planetary gerset providing the functionality of a variable-ratio transmission.

'672 patent, col. 8, ll. 45-65 (emphases added). This statement, however, merely acknowledges what we have already observed, i.e., that both designs utilize a planetary gear unit to output combined torque. That observation does not imply that the Berman/TRW and Prius I designs are identical relative to the limitations of the '970 claims. Indeed, the written description of the '672 patent touts the advantages of its clutch-based design over both the CTTU-based design of the '970 patent and the planetary gear unit design of the Prius I. Id. at col. 9, ll. 38-51; col. 12, ll. 17-21. This is entirely consistent with the jury's finding that Toyota's planetary gear unit design infringes the CTTU-based design of the '970 patent but not the clutched-based design of the '672 patent.

To further buttress its argument that Paice equated the Berman/TRW design with the accused drive trains and disclaimed them, Toyota cites a host of extrinsic evidence, including a Paice “business plan” explaining the cost disadvantages of the Berman/TRW design, J.A. 12235; a confidential document written by Paice founder Dr. Alex Severinsky describing “[t]he Toyota Hybrid Drive” as an “EXACT copy” of the Berman/TRW design, J.A. 12089; an article quoting a co-inventor of the ’088 patent as describing “the Toyota TMS” system to be a “one-on-one copy” of the Berman/TRW design, J.A. 15754; a page from Paice’s “marketing materials” asserting that the “Toyota Prius” “is the realization of the 1971 TRW patent,” J.A. 15348; an email from Dr. Severinsky to Toyota stating that Paice’s “technology is quite opposite to your Prius,” J.A. 12097; and the following notations hand written by Dr. Severinsky in the margin of an article describing the Prius I:



The image shows two handwritten phrases in a margin, each with a horizontal line above it. The first phrase is "This is TRW not Toyota" and the second is "This is TRW invention". Below each phrase is a line of Korean text. The first line of Korean text is "이것은 TRW가 아니라 토요타의 발명이다" and the second is "이것은 TRW의 발명이다".

J.A. 12085 (notations read “This is TRW not Toyota” and “This is TRW invention”).¹¹

Although the parties disagree as to whether extrinsic evidence may give rise to a disavowal of subject matter, we need not address this point. Simply put, we reject Toyota’s contention that Paice’s statements equating the Berman/TRW design to Toyota’s design amount to a complete disavowal of the accused transaxle units.

¹¹ Dr. Severinsky testified at trial that these notations represent his shorthand way of saying that the Berman/TRW design is “very similar” to the Prius I design. J.A. 1161.

3. Admissions by Counsel

The third and final reason Toyota urges us to overturn the jury's finding of infringement relates to a portion of the opening statement made to the jury by counsel for Paice:

And keep in mind that Toyota can cut off damages tomorrow. Toyota can make sure they never have to pay Paice another cent by doing what? By going back to the Prius I and don't use Dr. Severinsky's high voltage/low current invention anymore and stop using road load.

J.A. 1130 (emphasis added). According to Toyota, this is a binding judicial admission by Paice that the Prius I does not infringe any of the patents in suit. In Toyota's opinion, "the undisputed evidence established that the structural configurations of the accused vehicles are the same as the Prius I for purposes of determining infringement." Appellants' Br. 58. Therefore, Toyota argues, this admission necessarily implies that none of the accused vehicles infringe.

The district court agreed with Toyota to a certain extent, and held that the above statement constitutes a "binding admission" that Prius I does not infringe the patents-in-suit. Paice LLC v. Toyota Motor Corp., No. 2:04-CV-211, Docket No. 225, slip op. at 13 (E.D. Tex. Aug. 16, 2006). The district court noted, however, that the jury did not consider whether the claim limitations were "met equally by the Prius I as the Prius II." Id. slip op. at 13-14. Therefore, the district court disagreed that the evidence established that the structural configurations of the accused vehicles are the same as the Prius I for purposes of determining infringement. Instead, the court concluded, "there is sufficient evidence underlying the jury's verdict and that verdict should not be overturned based on the conclusory admission by Plaintiff's counsel." Id. slip op. at 14.

In effect, the district court treated the statement as merely an evidential admission—as opposed to a conclusive admission—which the jury was free to weigh against the other evidence adduced at trial.¹² See Pickens v. Equitable Life Assurance Soc’y, 413 F.2d 1390, 1393-94 (5th Cir. 1969) (holding that a district court properly treated an admission as evidential and submitted it to the jury for consideration). In light of what we view as tenuous logic in Toyota’s argument, and the “conclusory” nature of the admission itself, we think the district court acted well within the confines of its discretion by ruling as it did.

Having rejected all three reasons set forth by Toyota for overturning the jury’s finding of infringement, we hold that the district court did not err in denying Toyota’s motion for JMOL.

B. Paice’s Cross Appeal

We next address the issues presented by Paice’s cross appeal, namely, (1) the district court’s denial of the motion for JMOL of no literal infringement of claims 11 and 39 of the ’970 patent, claim 15 of the ’672 patent, and claims 1 and 2 of the ’088 patent; and (2) the district court’s imposition of an ongoing royalty of \$25 per Prius II, Toyota Highlander, or Lexus RX400h vehicle subsequently sold by Toyota. As with Toyota’s appeal, we reject each of Paice’s contentions with respect to infringement issues. With respect to the ongoing royalty, however, we are unable to determine whether the district

¹² Indeed, when Paice objected at trial to the introduction of evidence regarding Prius I, the district court decided that it would “allow the testimony,” but that it would also “allow [Paice] great leeway in cross-examining on these issues . . . and . . . see what weight the jury gives [the evidence] under those circumstances.” Trial Tr. 14:17–22, Dec. 15, 2005.

court abused its discretion. Accordingly, we must vacate a limited portion of the district court's order and remand for further proceedings.

1. Denial of JMOL

Paice argues that the verdict of no literal infringement of claims 11 and 39 of the '970 patent, which was based on the jury's determination that the CTTU limitation is not satisfied by Toyota's drive train, is unsupported by the evidence. With respect to Toyota's argument that the accused drive trains lack a "multi-input device or component," Paice points out that nothing in the district court's claim construction "prevents a single shaft from being both an input and an output shaft," or "limit[s] the nature or the location of the input." Appellee's Br. 57-58. Paice's argument, however, misses the point of Dr. Caulfield's testimony. Because the combination of the fractional (72%) ICE torque with the MG2 torque does not occur until after the fractional ICE torque is output from the planetary gear unit to the ring gear, there is no single "device or component" in Toyota's design that can be characterized as "multi-input." Although the jury, in light of its equivalence verdict, must have seen Dr. Caulfield's distinction as insubstantial, we believe that his testimony provided the jury with substantial evidence upon which to base its finding of no literal infringement of claims 11 and 39 of the '970 patent.

Paice further argues that the jury's verdict of no literal infringement of claim 15 of the '672 patent and claims 1 and 2 of the '088 patent, each of which contains a clutch limitation, is unsupported by the evidence. The district court construed the term "clutch" as "a device that selectively permits or prohibits transfer of torque and rotation." Claim Construction Opinion, slip op. at 33. According to Dr. Nichols, the court's construction is

satisfied by a combination of the planetary gear unit, the ICE shaft, the shaft leading from the ring gear to the drive sprocket, and the drive sprocket itself. J.A. 1256-57. This combination can be controlled either by MG2, which is able to prevent torque transfer from the ICE shaft to the drive sprocket by providing a counter torque at the ring gear sufficient to negate torque provided by the ICE shaft, J.A. 1257, or by a parking pawl, which is simply a lock that prevents movement of the gears, J.A. 1552-53. However, because the court's construction literally requires "a device, not a number of devices" to act as the clutch, Dr. Caulfield explained that the planetary gear unit, as a single device, will always transfer any torque provided by the ICE to the ring gear output. J.A. 1522, 1553 ("For clarity, [torque] gets out of the device, which is the planetary, and goes to the parking pawl, which is a couple of gears downstream . . .").

Once again, we believe this testimony provided the jury with substantial evidence upon which to base its finding of no literal infringement of claim 15 of the '672 patent, and claims 1 and 2 of the '088 patent. Therefore, we hold that the district court did not err in denying Paice's motion for JMOL.

2. Imposition of an Ongoing Royalty

Finally, we address the district court's ongoing-royalty order, which allows Toyota

to continue using the invention of the '970 patent at a cost of \$25 per accused vehicle.¹³

The district court's order reads:

Defendants are hereby ORDERED, for the remaining life of the '970 patent, to pay Plaintiff an ongoing royalty of \$25.00 per infringing Prius II, Toyota Highlander, or Lexus RX400H (the "infringing vehicles"). Royalties shall be paid quarterly and shall be accompanied by an accounting of the sales of infringing vehicles. Payments shall begin three months after the date of signing this judgment and shall be made quarterly thereafter. The first payment shall include royalties for all infringing vehicles sold that were not accounted for in the jury's verdict. Payments not made within 14 days of the due date shall accrue interest at the rate of 10%, compounded monthly. Plaintiff shall have the right to request audits. It is anticipated that the parties may wish to agree to more comprehensive and convenient terms. The parties shall promptly notify the Court of any such agreement. The Court maintains jurisdiction to enforce this portion of the Final Judgment.

J.A. 110. Paice argues that the district court did not have the statutory authority to issue this order, and that, even if the court did have such authority, Paice was denied its right to a jury trial under the Seventh Amendment to determine the amount of the ongoing royalty rate.¹⁴

¹³ We use the term ongoing royalty to distinguish this equitable remedy from a compulsory license. The term "compulsory license" implies that anyone who meets certain criteria has congressional authority to use that which is licensed. See, e.g., 17 U.S.C. § 115 ("When phonorecords of a nondramatic musical work have been distributed . . . under the authority of the copyright owner, any other person . . . may, by complying with the provisions of this section, obtain a compulsory license to make and distribute phonorecords of the work." (emphasis added)). By contrast, the ongoing-royalty order at issue here is limited to one particular set of defendants; there is no implied authority in the court's order for any other auto manufacturer to follow in Toyota's footsteps and use the patented invention with the court's imprimatur.

¹⁴ Paice also argues that the ongoing royalty inhibits Paice's ability to grant an exclusive license under its patent. To the extent Paice's inability to grant an exclusive license is a valid consideration, the fact that § 283 is permissive indicates that concerns regarding exclusivity do not outweigh other equitable factors. The district court considered this factor and rejected it, concluding that "other potential licensees would [not] be less likely to take a license if this case ends with monetary damages instead of equitable relief." J.A. 100. This finding is supported by substantial evidence.

We begin with the language of 35 U.S.C. § 283, which provides in relevant part:

The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.

Perhaps the most apparent restriction imposed by § 283 is that injunctions granted thereunder must “prevent the violation of any right secured by patent.” We have previously held that this statutory language limits the scope of activities that may be enjoined. See, e.g., Joy Techs. v. Flakt, Inc., 6 F.3d 770, 777 (Fed. Cir. 1993) (holding that noninfringing acts may not be enjoined). The more difficult question raised by this case, however, is whether an order permitting use of a patented invention in exchange for a royalty is properly characterized as preventing the violation of the rights secured by the patent.

Under some circumstances, awarding an ongoing royalty for patent infringement in lieu of an injunction may be appropriate. In Shatterproof Glass Corp. v. Libbey–Owens Ford Co., 758 F.2d 613, 628 (Fed. Cir. 1985), this court upheld a 5% court-ordered royalty, based on sales, “for continuing operations.” Although the parties in that case contested the amount of the royalty, styled a “compulsory license” by the court, there was no dispute as to the district court’s authority to craft such a remedy. See id. In the context of an antitrust violation, “mandatory sales and reasonable-royalty licensing” of relevant patents are “well-established forms of relief when necessary to an effective remedy, particularly where patents have provided the leverage for or have contributed to the antitrust violation adjudicated.” United States v. Glaxo Group Ltd., 410 U.S. 52, 59 (1973).

But, awarding an ongoing royalty where “necessary” to effectuate a remedy, be it for antitrust violations or patent infringement, does not justify the provision of such relief as a matter of course whenever a permanent injunction is not imposed. In most cases, where the district court determines that a permanent injunction is not warranted, the district court may wish to allow the parties to negotiate a license amongst themselves regarding future use of a patented invention before imposing an ongoing royalty. Should the parties fail to come to an agreement, the district court could step in to assess a reasonable royalty in light of the ongoing infringement.

In this case, the district court, after applying the four-factor test for a permanent injunction and declining to issue one, imposed an ongoing royalty sua sponte upon the parties. But, the district court’s order provides no reasoning to support the selection of \$25 per infringing vehicle as the royalty rate. Thus, this court is unable to determine whether the district court abused its discretion in setting the ongoing royalty rate. Accordingly, we think it prudent to remand the case for the limited purpose of having the district court reevaluate the ongoing royalty rate. Upon remand, the court may take additional evidence if necessary to account for any additional economic factors arising out of the imposition of an ongoing royalty.¹⁵ The district court may determine that \$25 is, in fact, an appropriate royalty rate going forward. However, without any indication as to why that rate is appropriate, we are unable to determine whether the district court abused its discretion. Cf. Hensley v. Eckerhart, 461 U.S. 424, 437 (1983) (“It [is]

¹⁵ This process will also, presumably, allow the parties the opportunity to present evidence regarding an appropriate royalty rate to compensate Paice and the opportunity to negotiate their own rate prior to the imposition of one by the court, as the concurrence suggests.

important . . . for the district court to provide a concise but clear explanation of its reasons for the fee award.”). The district court should also take the opportunity on remand to consider the concerns Paice raises about the terms of Toyota’s permissive continuing use.

Finally, we address Paice’s argument that it was entitled to a jury trial to determine the amount of the ongoing royalty rate. “The Seventh Amendment provides that ‘in Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved’” Markman v. Westview Instruments, Inc., 517 U.S. 370, 376 (1996). “The constitutional question of whether a party is entitled to a jury trial is a question of law that this court reviews de novo.” Tegal Corp. v. Tokyo Electron Am., Inc., 257 F.3d 1331, 1339 (Fed. Cir. 2001).¹⁶ “[W]e ask, first, whether we are dealing with a cause of action that either was tried at law at the time of the founding or is at least analogous to one that was.” Markman, 517 U.S. at 376. “If the action in question belongs in the law category, we then ask whether the particular trial decision must fall to the jury in order to preserve the substance of the common-law right as it existed in 1791.” Id.

In contending that it was improperly deprived of a jury trial, Paice merely states that “[i]t is well settled that the determination of damages is a legal question which carries a Seventh Amendment right to a jury trial.” Appellee’s Br. 64. While Paice may

¹⁶ Preliminary to our Seventh Amendment inquiry, we must satisfy ourselves that the statute in question cannot be read in a manner that avoids the constitutional question. Tull v. United States, 481 U.S. 412, 417 n.3 (1987). The wording of 35 U.S.C. § 283, which empowers “courts . . . [to] grant injunctions in accordance with the principles of equity . . . on such terms as the court deems reasonable,” leaves no doubt that Congress did not intend to statutorily entitle patentees to a jury trial for the purposes of awarding relief thereunder. (Emphases added.)

be correct as a general matter, not all monetary relief is properly characterized as “damages.” See, e.g., Root v. Ry., 105 U.S. 189, 207 (1882) (“When, . . . relief was sought which equity alone could give . . . in order to avoid a multiplicity of suits and to do complete justice, the court assumed jurisdiction to award compensation for the past injury, not, however, by assessing damages, which was the peculiar office of the jury, but requiring an account of profits”); cf. Bowen v. Massachusetts, 487 U.S. 879, 910 (1988) (“[E]ven if the District Court’s orders are construed in part as orders for the payment of money by the Federal Government to the State, such payments are not ‘money damages’ That is, since the orders are for specific relief (they undo the Secretary’s refusal to reimburse the State) rather than for money damages (they do not provide relief that substitutes for that which ought to have been done) they are within the District Court’s jurisdiction”). As such, the fact that monetary relief is at issue in this case does not, standing alone, warrant a jury trial. Accordingly, Paice’s argument falls far short of demonstrating that there was any Seventh Amendment violation in the proceedings below.

V. CONCLUSION

For the reasons discussed, we vacate and remand the portion of the district court’s final order insofar as it relates to the imposition of an ongoing royalty at a rate of \$25 per infringing vehicle. In all other respects, we affirm.

AFFIRM-IN-PART, VACATE-IN-PART, AND REMAND

United States Court of Appeals for the Federal Circuit

2006-1610, -1631

PAICE LLC,

Plaintiff-Cross Appellant,

v.

TOYOTA MOTOR CORPORATION,
TOYOTA MOTOR NORTH AMERICA, INC.,
and TOYOTA MOTOR SALES, U.S.A., INC.,

Defendants-Appellants.

RADER, Circuit Judge, concurring.

I agree with the court's judgment in this matter, with respect to both Toyota's appeal and Paice's cross-appeal. But, I write separately to express my opinion that in remanding to the district court for reevaluation of the "ongoing royalty" rate, this court should do more than suggest that "the district court may wish to allow the parties to negotiate a license amongst themselves . . . before imposing an ongoing royalty." Slip op. at 34 (emphasis added). Instead, this court should require the district court to remand this issue to the parties, or to obtain the permission of both parties before setting the ongoing royalty rate itself.

District courts have considerable discretion in crafting equitable remedies, and in a limited number of cases, as here, imposition of an ongoing royalty may be appropriate. Nonetheless, calling a compulsory license an "ongoing royalty" does not make it any less a compulsory license. To avoid many of the disruptive implications of a

royalty imposed as an alternative to the preferred remedy of exclusion, the trial court's discretion should not reach so far as to deny the parties a formal opportunity to set the terms of a royalty on their own. With such an opportunity in place, an ongoing royalty would be an ongoing royalty, not a compulsory license.

In this case, because the court imposed an ongoing royalty on the parties sua sponte after denying injunctive relief, the parties had no meaningful chance to present evidence to the district court on an appropriate royalty rate to compensate Paice for Toyota's future acts of infringement. Evidence and argument on royalty rates were, of course, presented during the course of the trial, for the purposes of assessing damages for Toyota's past infringement. But pre-suit and post-judgment acts of infringement are distinct, and may warrant different royalty rates given the change in the parties' legal relationship and other factors. When given choices between taking additional evidence or not, and between remanding to the parties or not, a district court may prefer the simplest course – impose its own compulsory license. This simplest course, however, affords the parties the least chance to inform the court of potential changes in the market or other circumstances that might affect the royalty rate reaching into the future.

In most cases, the patentee and the infringer should receive an opportunity at least to set license terms that will apply to post-suit use of the patented invention. This general principle has deep roots in both law and policy. Projecting the costs to be incurred for what would otherwise be future acts of infringement is necessarily a speculative exercise, even for the most stable markets and technologies. As licenses are driven largely by business objectives, the parties to a license are better situated than the courts to arrive at fair and efficient terms. After all, it is the parties, rather than

the court, that will be bound by the terms of the royalty. Particularly in the case of the patentee, who has proven infringement of its property right, an opportunity to negotiate its own ongoing royalty is a minimal protection for its rights extending for the remainder of the patent term.

For these reasons, I would require the district court to allow the parties an opportunity to set the ongoing royalty rate, or, at least to secure the permission of both parties before setting the rate itself. Of course, if the parties cannot reach agreement, the court would retain jurisdiction to impose a reasonable royalty to remedy the past and ongoing infringement.