IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

MAGNETAR TECHNOLOGIES CORP. and G&T CONVEYOR CO.,	:	
Plaintiffs,	:	
v.	:	C. A. No. 07-127-LPS-MPT
SIX FLAGS THEME PARKS, INC., et al.,	:	
Defendants.	:	

REPORT AND RECOMMENDATION

I. INTRODUCTION

This is a patent infringement case. On March 1, 2007, plaintiffs Magnetar Technologies Corp. ("Magnetar")[1] and G&T Conveyor Co. ("G&T")[2] (collectively, "plaintiffs") sued the defendant theme park operators ("defendants"),[3] alleging infringement of U.S. Patent Nos. 5,277,125 ("the '125 patent") and 6,659,237 ("the '237 patent").[4] Plaintiffs claim numerous roller coasters and other amusement park rides infringe claim 3 of the '125 patent and/or claims 1 and 10 of the '237 patent. Fact discovery closed April 2, 2012. The parties submitted opening expert reports on June 1, 2012 and rebuttal reports on July 1, 2012. Expert discovery closed August 10, 2012.

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[1] Magnetar is the assignee of the '237 patent, and holds an exclusive field-limited license for the '125 patent. Magnetar's business includes the design and sale of magnetic brake systems for amusement rides and roller coasters.

[2] G&T is the assignee of the '125 patent. G&T's business primarily involves baggage-handling equipment for airports.

[3] Astroworld, L.P., Busch Entertainment Corp., Cedar Fair, Cedar Fair LP, Darien Lake Theme Park and Camping Resort, Inc., Elitch Gardens, L.P., Great America LLC, KKI, LLC, Kings Island Company, Knott's Berry Farm, Magic Mountain, LLC, Paramount Parks Inc., Park Management Corp., Riverside Park Enterprises, Inc., Six Flags Over Georgia II, L.P., Six Flags St. Louis, LLC, Six Flags Theme Parks Inc., and Texas Flags, LTD, Tierco Maryland Inc. (collectively "defendants"). Defendants are owners or operators of amusement parks in various locations.

[4] D.I. 1.

Presently before the court are defendants' motion for summary judgment of invalidity of the '125 patent,[5] plaintiffs' motion for summary judgment of infringement of claim 3 of the '125 patent,[6] defendants' motion for summary judgment of non-infringement of claim 3 of the '125 patent,[7] defendants' motion for summary judgment of invalidity and non-infringement of the '237 patent[8] and plaintiffs' motion for summary judgment of infringement of the '237 patent.[9]

II. BACKGROUND OF THE INVENTIONS

The Abstract of the '125 patent describes the invention as follows:

> Material handling car and track assembly, the assembly comprising a car having wheels mounted thereon, and a track having two parallel rails, the wheels being adapted to roll on the rails to facilitate movement of the car along the track, a metal slider extending from an underside of the car and lengthwise of the car, and opposed linear motors mounted be[t]ween the tracks and spaced from each other to define a gap between the motors, the slider being adapted to pass through the gap, the motors being operative to act on the slider to impart thrust to the car, the motors being oriented such as to substantially eliminate magnetic at[t]raction between the motors and the car. The invention further contemplates opposed magnets mounted be[t]ween the tracks and spaced from each other to define a gap between the magnets, the slider being adapted to pass through the gap between the magnets, the magnets being operative to act on the slider to impart braking to the car, whereby to decelerate the car.[10]

The Abstract of the '237 patent describes the invention as follows:

> An eddy current brake includes a diamagnetic member, a first support wall and a second support wall with the first and second linear arrays of permanent magnets disposed on the walls facing one another. Apparatus

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[5] D.I. 337.
[6] D.I. 327.
[7] D.I. 339.
[8] D.I. 333.
[9] D.I. 329.
[10] '125 patent, Abstract (with language corrected as described in the certificates of correction). All citations to the '125 patent include language corrected as described in the certificates of correction. Alterations are added to misspelled words not corrected in the certificates of correction.

is provided for moving at least one of the walls in order to control eddy current induced in the member in the passage of the member therepast to adjust the braking force between the magnets and the member. Apparatus is also provided for causing the velocity of the member to change the braking force between the magnets and the member.[11]

III. GOVERNING LAW

Summary judgment is appropriate "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law."[12] This standard is applicable to all types of cases, including patent cases.[13] The movant bears the burden of establishing the lack of a genuinely disputed material fact by demonstrating "that there is an absence of evidence to support the nonmoving party's case."[14] "Facts that could alter the outcome are 'material,' and disputes are 'genuine' if evidence exists from which a rational person could conclude that the position of the person with the burden of proof on the disputed issue is correct."[15] "Where the record taken as a whole could not lead a rational trier of fact to find for the non-moving party, there is no genuine issue for trial."[16]

IV. VALIDITY OF THE '125 PATENT

Defendants present four arguments in support of their motion for summary judgment of invalidity of the '125 patent: (1) the only asserted claim, claim 3, includes a plain error that has not been corrected and renders it fatally indefinite; (2) the patent

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[11] '237 patent, Abstract.

[12] FED. R. CIV. P. 56(a).

[13] *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1576-77 (Fed. Cir. 1989).

[14] *Celotex Corp. v. Catrett*, 477 U.S. 317, 325 (1986).

[15] *Horowitz v. Fed. Kemper Life Assurance Co.*, 57 F.3d 300, 302 n.1 (3d Cir.1995) (internal citations omitted).

[16] *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986) (internal quotations omitted).

fails to name as an inventor the individual who developed the only new element in the claimed system; (3) the subject matter of claim 3 was reduced to practice, offered for sale, and actually sold prior to the critical date, giving rise to an on-sale bar under 35 U.S.C. § 102(b); and (4) the claim is invalid as an obvious and predictable combination of known elements.

A. Plain Error in Claim 3

Defendants contend a plain error in claim 3 of the '125 patent renders it indefinite. That claim recites:

> 3. Material handling car and track assembly, said assembly comprising:
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> a car having wheels mounted thereon, and
>
> *a track having two parallel rails*, said wheels being adapted to roll on said rails to facilitate movement of said car along said track,
>
> a metal fin extending from an underside of said car and lengthwise of said car, and
>
> *opposed magnet assemblies mounted between said tracks*, said opposed assemblies being spaced from each other by a distance exceeding the thickness of said fin to define a gap between said magnet assemblies, said fin being adapted to pass through said gap in travel of said car over said magnets, each of said assembl[ies] is comprising a mounting bracket, a plate attached to said mounting bracket, and a series of magnets bonded to said plate, said magnets on said plate being disposed side by side in a direction of travel of said car on said rails, and said magnets being operative sequentially to act on said fin to impart braking to said car.[17]

Defendants argue the plain error is that the magnets cannot be mounted between plural "tracks," because there is only one track recited. They contend because

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[17] '125 patent, claim 3 (emphasis added).

the claim has already been construed but, as construed, contains a plain error that renders it nonsensical (the claimed magnets cannot be between "tracks" where there is only one "track"), the claim is invalid.[18] They maintain, even if it were not too late to construe this term, it is not fixable because errors in a patent claim can only be corrected by the courts "if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims."[19] Defendants argue that because there are purportedly at least two reasonable ways to correct the error, which would result in corrected claims of different scopes, the claim is invalid as being insolubly ambiguous.[20]

Defendants suggest one possible revision would be to change "said tracks" to "said rails," noting that correction would be consistent with what is shown in the figures of the patent, because the magnets would be between the rails.[21]

Alternatively, defendants suggest a reasonable revision would be to change "said tracks" to "said wheels."[22] As support, defendants state this revision is also supported by the figures, and note the specification explains that the inventors desired to have the motors (and therefore also the brakes) in line with the wheels in order to prevent pitching that would cause the wheels to lift off the track:[23]

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[18] D.I. 338 at 10 (citing *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) (explaining that where "interpretation results in a nonsensical construction of the claim as a whole, the claim must be invalidated")).

[19] *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1354 (Fed. Cir. 2003).

[20] D.I. 338 at 10. Defendants also state the prosecution history is silent on the issue.

[21] *Id.* at 10-11.

[22] *Id.* at 11.

[23] *Id.*

> Referring to FIG. 1, it will be seen that the motors 16 are on about the same level above the bottom plates 3 as are the horizontal travel wheels 9 and portions 13 of the vertical travel wheels 5 above their axes 15, when the car passes over the motors. Thus, as is apparent from FIG. 1, the driving force imparted to the slider 12 by the motors 16 is on about the same level as the horizontal wheels and the portion of the vertical wheels above the vertical wheel axes. Thus, there is produced substantially only a forward thrust, without a turning moment imparted to the travel wheels tending to lift the wheels off the track.[24]

Defendants maintain the choice of "rails" or "wheels" is significant because the different substitutions would result in claims of different scope.[25] Defendants state this is true because the wheels do not necessarily need to be in line with the rails, as in the figures in the patent, but may run entirely above the rails.[26] In their opening brief, defendants provided two hypothetical illustrations: one showing the magnets between the wheels, but not between the rails, and another showing the magnets between the rails, but not between the wheels.[27] Whether either of defendants' hypothetical configurations would be covered by claim 3 of the '125 patent would change depending on the substitution of "tracks" with "rails" or "wheels."

Defendants argue because the appropriate correction would be "subject to reasonable debate," the *Novo Industries* test cannot be satisfied and the claim cannot be corrected. Defendants conclude, therefore, the error renders claim 3 of the '125 patent invalid.

Plaintiffs argue Figure 1 of the '125 patent shows a slider (item 12) between two rails 8 and between two motors 16.[28] They also point to the specification's description

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[24] '125 patent, 4:57-68.
[25] D.I. 338 at 12.
[26] *Id.* at 12-13.
[27] *Id.* at 13.
[28] D.I. 361 at 6-7.

of the position of magnetic members shown in Figure 2: "[t]he magnetic members 20 are positioned between the rails 8 so as to form a gap 29, the width of which is greater than the width of the slider 12."[29] Plaintiffs also note Figure 2A illustrates the magnet assemblies 20, with magnets 22 on each side of the gap for the slider 12 illustrated in Figure 1.[30] Plaintiffs state the specification and drawings, therefore, describe a slider that is between the rails of the track, moving through a gap formed by the magnet assemblies between the rails.[31]

Plaintiffs also point to named inventor Joel Staehs's testimony regarding his understanding of the claim:

> Q. Right. But then–then the magnets are between said tracks. They're between the tracks. They're not between the rails.
>
> A. Oh, semantics. Oh, my goodness. I mean, that–I don't see any problem with that. I mean, a railroad track has got two rails. A telecar track has got two rails. The track is made up of two rails.
>
> Q. But the claim doesn't say between the rails. It says, [b]etween said tracks, right?
>
> A. Well, I'm a technical kind of guy, and to me that's–there's no problem with that. I mean, everybody knows that a track has two rails.
>
> Q. Right. But that's not–that's not what the claim actually says. It says, [b]etween said tracks. It could say–it could have been written differently and say, [b]etween said rails. But it doesn't say that.
>
> A. Okay. All right. . . . Maybe rails would have been better, but I–I knew what it meant.[32]

Plaintiffs also contend the examiner was not confused, either, noting application

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[29] '125 patent, 5:18-21.

[30] D.I. 361 at 7.

[31] *Id.* Plaintiffs also cite the specification's recitation that "[b]rackets 14 are disposed inwardly of the rails 8 . . . ." '125 patent, 4:13-14.

[32] *Id.*, Ex. 3 (Staehs Dep., July 29, 2011) at 79:5-22.

claims 8, 9, and 10 that recited "between said tracks"[33] were rejected as obvious under § 103, not as indefinite under § 112.[34]

Finally, plaintiffs assert defendants' expert, Dr. James L. Kirtley, Jr., has the same understanding as shown by his reference to a "prior art system us[ing] linear motor stators and permanent magnets lying flat between a *pair of tracks* and operating on a plate (the rotor or shuttle) that was mounted horizontally on the bottom of a car that rolled on the tracks."[35]

Plaintiffs conclude: the specification makes clear the fin passes through a gap between opposed magnetic assemblies and those assemblies are between the rails of the track; Staehs testified the configuration is clear; and the examiner did not find the claims indefinite.[36]

The court first notes plaintiffs do not dispute the reference to "said tracks" is an error. Plaintiffs' citation to inventor testimony and the '125 patent's specification and figures merely supports the contention that it is reasonable to change "tracks" to "rails." Defendants do not dispute that contention and, in fact, affirmatively agree that such change is supported by the intrinsic evidence.

Plaintiffs also do not take issue with the law as set forth in *Novo Industries* that errors in patent claims can only be corrected by the court "if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation

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[33] *Id.* at 8 (citing *id.*, Ex. 5 ('125 patent file history) original claims 8, 9, and 10, pp. 13-14).
[34] *Id.* (citing *id.*, Ex. 5 ('125 patent file history) Office Action dated May 18, 1993, ¶ 6, pp. 4-5).
[35] *Id.* at 9 (citing *id.*, Ex. 14 (Opening Expert Report of James L. Kirtley, Jr.) at ¶ 46, p.11 (emphasis added)).
[36] *Id.* at 12.

of the claims."[37] Plaintiffs do not, however, make any argument rebutting defendants' contention that it is also a reasonable change to substitute "wheels" for "tracks," that such substitution is supported by the specification, or that substituting "wheels" or "rails" for "tracks" could lead to differing claim scope. Plaintiff Magnetar's 30(b)(6) witness, Edward Pribonic, even agreed the substitution of "wheels" would make sense:

> Q. [W]ould this claim make sense instead of "opposed magnet assemblies mounted between said tracks," it said, "opposed magnet assemblies mounted between said wheels"?
>
> A. It could have said whatever they wanted.
>
> Q Would that make sense, though? Is that where in this invention the magnet assemblies are?
>
> [Objection]
>
> A. In the illustrations in this patent, yes, they are.[38]

Because the court agrees with defendants that the appropriate correction would be "subject to reasonable debate" between "rails" and "wheels," the court grants defendants' motion for summary judgment that claim 3 of the '125 patent is invalid for indefiniteness under 35 U.S.C. § 112, ¶ 2.[39]

B. Failure to Name All Inventors

"A person shall be entitled to a patent unless . . . he did not himself invent the subject matter sought to be patented."[40] "Since the word 'he' refers to the specific inventive entity named on the patent, this subsection mandates that a patent accurately

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[37] *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1354 (Fed. Cir. 2003).

[38] D.I. 338, Ex. K (Pribonic Dep., Aug. 3, 2011) at 268:5-15.

[39] The court also rejects plaintiffs argument based on the examiner not rejecting this claim for indefiniteness. As defendants correctly note, patent examiners allowed every patent claim that has ever been invalidated due to an error. D.I. 383 at 1.

[40] 35 U.S.C. § 102(f).

list the correct inventors of the claimed invention."[41] "[I]f nonjoinder of an actual inventor is proved by clear and convincing evidence, a patent is rendered invalid."[42]

According to defendants, the subject matter of the '125 patent was developed at BAE Automated Systems ("BAE"), whose business was designing, manufacturing, and installing airport baggage handling systems.[43] Prior to the development of the system claimed in the '125 patent, BAE had installed a number of systems using wheeled carts, called "telecars," that moved around on tracks.[44] The telecars were driven by "linear motors," which are electric motors in which the stator (the stationary part of the motor) and the rotor (the moving part of the rotor) are "unrolled," so that instead of producing a torque (rotation) about a central axis, the system produces a linear force along its length.[45] In these prior art BAE systems, the linear motors included flat motor stators laid horizontally between the tracks that cooperated with flat plates mounted horizontally to the bottoms of the telecars.[46]

When BAE wanted to build a larger version of its system for use by American Airlines at the Dallas-Ft. Worth Airport, it had to cover longer distances with faster cars and were having problems with the single-sided motors then in use overheating.[47] Defendants maintain the system developed to solve that problem was essentially identical to the earlier system except, instead of a horizontal "single-sided" motor, it used a "double sided" motor. With the double-sided motor, the two stators were

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[41] *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1349 (Fed. Cir. 1998).
[42] *Id.* (internal citations omitted).
[43] D.I. 338 at 1-2 (citing *id.*, Ex. I (Staehs Dep., July 29, 2011) at 20-22).
[44] *Id.* at 2 (citing *id*, Ex. I at 20-34).
[45] *Id.* (citing *id.*, Ex. C (Expert Report of James L. Kirtley, Jr.) at ¶¶ 33-42).
[46] *Id.* (citing *id.*, Ex. I at 25-26).
[47] *Id.* (citing *id.*, Ex. I at 26-28).

mounted vertically, facing each other, and the plate on the car was rotated 90 degrees, to pass between the two vertical stators.[48]

According to defendants, the double-sided motor arrangement, shown in Figure 1 of the '125 patent, was the idea of Kwangho Chung, who is not named as an inventor of that patent. At deposition, Chung testified it was his idea to use the double-sided motor, and he had to persuade the company to accept the idea:

> Q. Whose idea was it to use the double-sided motor in the Denver project?
>
> A. I have. It was carryover from the–the prototypes that we set up for demonstration in–on behalf of American. So American has double-sided, the prototype and stuff. We just–transferring the double-sided after seeing how it works and all that. So we went on ahead with the Denver. But still somebody has to stick neck out that double-sided works. And in my opinion, that's–that's my neck.
>
> * * *
>
> Q. And so where did you get the idea to use the double-sided motor?
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> A. Well, it's in the books in here and there, I guess. So I cannot pin down exactly who is my–who is my source of information on that, but I assume that all along it's more of a prior art–prior art, nothing more than that. I don't claim I invented it, but what I did was to commit myself to–to go to double sided. . . . So it is–it is my decision to–to go use double-sided. And then also prove that you can live with double-sided as I presented. So you don't have to worry about excess heat. . . .
>
> Q. Did you have to persuade the company to use the double-sided approach?
>
> A. Oh, yeah. That was my–that was–wasn't my opinion. That was a huge decision. Can you imagine that you make about a thousand or so linear motors and then go ahead and get the contract and started, find that everything is getting very hot and burning up and all this stuff. That's

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[48] *Id.* Plaintiffs do not dispute defendants' description of the earlier BAE singe-sided motor or their description of the claimed double-sided motor.

going to be a huge mess. And I'm the only guy advocated, and then–not only advocated but proved, showed by testing any other means at the time, this is doable. . . . Somebody says, Well, how do you know it will do the job? I said, You just said to trust me.[49]

Defendants maintain Joel Staehs, the only living named inventor of the '125 patent, corroborated Chung's testimony:

Q. Stepping back to the prototype in the warehouse, did that have the same structural set up as the–

A. No, it was completely–

Q. How did that differ from the other systems?

A. Well, the–the chassis–the chassis was a steel–steel frame. And the big–the–well, in order to run that many cars, 60 cars a minute, the motors–the motors would overheat. So we just–we–we talked about it. What are we going to do about this and that? Mr. Chung come up with the idea. He said, look, if you put two stators in there–he had done this once before in the–way back in the '60's, as a test. He ran a test for it. You put two stators in facing like this (indicates) with a small gap between them, you don't have to turn the motors off. They won't burn up that way, so therefore, we can eliminate the switches. Oh, that's a great idea. . . .

Q. Do you know where Mr. Chung got that idea originally?

A. No, I have no idea where he got it. I know he used it, though. I know he tried it many years ago, back in the '60's, when they were running thrust test. In other words, design a motor, see how much thrust you can get and they think they can get this much. You know, they were just running tests, experimenting, see how much they can get out of a motor. And he ran face-to-face with the vertical slider unit on their test bed.[50]

Defendants contend Chung's "great idea" was then claimed by BAE in the '125 patent:

Q. Well, if you look at Claim 1 for example, on–in Column 6, down on line 6 it says "linear induction motors mounted between said rails in an

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[49] *Id.*, Ex. O (Chung Dep., July 28, 2011) at 42:12-46:1.
[50] *Id.*, Ex. I at 38:21-40:3.

opposed configuration."

A. Yes.

Q. So that's–that was Mr. Chung's idea?

[objection]

A. Was it? I don't–I–he–he was the one that suggested we do that, yes. Or he said that would be the advantage of doing that.[51]

Defendants note Chung testified to contributing the double-sided motor described in the '125 patent and specifically claimed in claims 1 and 2. They maintain the only other living inventor, Staehs, corroborated Chung. Because Chung was not named as an inventor, defendants argue the patent is invalid.

The Federal Circuit has stated:

> All that is required of a joint inventor is that he or she (1) contribute in some significant manner to the conception or reduction to practice of the invention, (2) make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention, and (3) do more than merely explain to the real inventors well-known concepts and/or the current state of the art.[52]

Quoting the Federal Circuit's opinion in *Hess v. Advanced Cardiovascular Sys., Inc.*, plaintiffs note "[a]n inventor 'may use the services, ideas, and aid of others in the process of perfecting his invention without losing his right to a patent.'"[53] Plaintiffs insist Chung did not "do more than merely explain to the real inventors well-known concepts and/or the current state of the art," as required by the *Pannu* court, but rather, did no more than explain the prior art to the actual inventors.

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[51] *Id.*, Ex. I at 62:18-63:2.

[52] *Pannu*, 155 F.3d at 1351.

[53] 106 F.3d 976, 981 (Fed. Cir. 1997) (alteration in original) (quoting *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 624 (Fed. Cir. 1985)).

Plaintiffs point to Chung's testimony that, when asked where he got the idea to use double-sided motors, he stated: "Well, it's in the books in here and there, I guess. so I cannot pin down exactly who is my–who is my source of information on that, but I assume that all along it's more of a prior art–prior art, nothing more than that. I don't claim I invented it."[54] Plaintiffs also point out Chung stated he had "no opinion" when asked whether he thought he should be named as an inventor on the '125 patent.[55]

As further support for their position that Chung merely explained the prior art, plaintiffs cite Staehs' testimony that Chung had used two facing stator long ago, in the '60's.[56]

Plaintiffs also argue the rejection of original application claim 1 as being anticipated ("[t]he JA'105 reference shows a linear propelled car with two opposed stators")[57] demonstrates the examiner regarded opposed stators as old. The applicant amended original application claim 7 (issued claim 1) and argued the references, including JA'105, did not show the "*particular arrangement* of linear motors and car components set forth in amended claim 7 . . . ."[58] Thus, plaintiffs argue, the applicant did not contend that opposed motors were new.

Defendants contend whether the double-sided motors suggested by Chung were not "new" is not relevant as there is nothing in the claims of the '125 patent that did not

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[54] D.I. 338, Ex. O at 44:19-25.

[55] D.I. 361, Ex. 2 (Chung Dep., July 28, 2011) at 66:11-17 ("Q. Well, . . . if we assume that what's in there is patentable–should be patentable, do you think you should have been named as an inventor? [objection] A. I really had no opinion on that. I was content with being paid by the–by the invoice that I send in.").

[56] D.I. 338, Ex. I at 39:4-7 ("[Chung] said, look, if you put two stators in there–he had done this once before in the–way back in the '60's as a test.").

[57] D.I. 361, Ex. 5 ('125 patent file history) May 18, 1993 Office Action, p. 3, ¶ 4).

[58] *Id.*, Ex. 5 ('125 patent file history) Amendment received by the PTO July 21, 1993, Remarks section on sixth and seventh pages of the Amendment) (emphasis added).

exist before; the claims are combinations of old elements.[59] Defendants also maintain Chung meets each of the requirements to show joint inventorship set forth in *Pannu*. The court agrees.

First, plaintiffs do not dispute Chung contributed the double-sided motor illustrated in the figures, described in the specification, and claimed in claims 1 and 2 of the '125 patent. Chung testified it was his idea to use the double-sided motor and Staehs corroborated that testimony. Staehs testified "Mr. Chung come [sic] up with the idea [for the double-sided motor],"[60] and it was Chung's idea to use "linear induction motors mounted between said rails in opposed configuration" as required by claim 1 of the '125 patent.[61]

Second, Chung's contribution was not "insignificant," rather it was the solution to the problem BAE was facing, i.e., the potential of motors overheating and burning up. Staehs testified: "Mr. Chung come [sic] up with the idea. . . . You put two stators in facing like this (indicates) with a small gap between them, you don't have to turn the motors off. *They won't burn up that way*, so therefore, we can eliminate the switches. Oh, that's a great idea."[62]

Third, Chung's contribution was more than "merely explain[ing] to the real inventors well-known concepts and/or the current state of the art." According to defendants, Chung suggested a motor of which no other inventor was purportedly aware, did the testing to prove it worked, and stood behind it as the solution to the

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[59] D.I. 383 at 3.
[60] D.I. 338, Ex. I at 39:4-5.
[61] *Id.*, Ex. I at 62:25-63:1 ("[Chung] was the one that suggested we do that, yes.").
[62] *Id.*, Ex. I at 39:4-11 (emphasis added).

problem.[63] Chung testified that use of the double-sided motor at the Denver airport was his idea, and that "somebody has to stick neck out that double-sided works. And in my opinion, that's–that's my neck."[64] "[W]hat I did was to commit myself to–to go double-sided . . . . So . . . it is my decision . . . to go use double-sided. And then also proved that you can live with double sided as I presented."[65] Chung testified he had to persuade the company to use the double sided approach: "That was a huge decision. . . . And I'm the only guy advocated, and then–not only advocated but proved, showed by testing any other means at that time, this is doable. . . . Somebody says, Well, how do you know it will do the job? I said, You just said to trust me."[66]

The court concludes, therefore, Chung is an unnamed inventor of the '125 patent.

> Upon . . . a finding of incorrect inventorship, a patentee may invoke section 256 to save the patent from invalidity. Accordingly, the patentee must then be given an opportunity to correct inventorship pursuant to that section. Nonjoinder may be corrected 'on notice and hearing of all parties concerned' and upon a showing that the error occurred without any deceptive intent of the part of the unnamed inventor.[67]

Defendants argue section 256 provides no solution for plaintiffs. Chung was working as a consultant, not an employee of BAE, when he developed the double-sided brake.[68] Consequently, defendants argue plaintiffs do not have legal title to Chung's interest in the invention.[69] According to defendants, the result is that if Chung is not

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[63] *Id.* at 4.
[64] *Id.*, Ex. O at 42:12-21.
[65] *Id.*, Ex. O at 45:4-6.
[66] *Id.*, Ex. O at 45:10-46:1.
[67] *Pannu*, 155 F.3d at 1350 (quoting 35 U.S.C. § 256).
[68] D.I. 338 at 14 (citing deposition testimony of Staehs and Chung).
[69] *Id.* at 15.

added as an inventor, the patent is invalid for incorrect inventorship. Conversely, if he were added as an inventor, the suit would have to be dismissed for lack of standing.[70]

Plaintiffs did not respond to defendants' arguments regarding section 256, apparently conceding the futility of correcting inventorship via that section. The court, therefore, grants defendants' motion for summary judgment of invalidity based on incorrect inventorship.

C. On-Sale Bar under 35 U.S.C. § 102(b)

35 U.S.C. § 102(b) bars a patent where "the invention was . . . in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States." "[T]he on-sale bar applies when two conditions are satisfied before the critical date. First, the product must be subject of a commercial offer for sale. . . . Second, the invention must be ready for patenting."[71]

> [A]n accused infringer challenging the validity of a patent under the on-sale bar must demonstrate by clear and convincing evidence that there was a definite sale or offer to sell more than one year before the application for the subject patent, and that the subject matter of the sale or offer to sell fully anticipated the claimed invention or rendered it obvious.[72]

"Following *Pfaff*, the court held in *Group One* that '[o]nly an offer which rises to the level of a commercial offer for sale, one which the other party could make into a binding

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[70] *Id.* (citing *Crown Die & Tool Co. v. Nye Tool & Mach. Works*, 261 U.S. 24, 40-41 (1923) ("[T]he plaintiff in an action at law must be the person or persons in whom the legal title to the patent resided at the time of the infringement."); *Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc.*, 587 F.3d 1375, 1378 (Fed. Cir. 2009) ("'[T]o assert standing for patent infringement, the plaintiff must demonstrate that it held enforceable title at the inception of the lawsuit.'") (alteration in original) (quoting *Paradise Creations, Inc. v. UV Sales, Inc.*, 315 F.3d 1304, 1309 (Fed. Cir. 2003))).

[71] *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 67 (1998).

[72] *Elan Corp., PLC v. Andrx Pharm., Inc.*, 366 F.3d 1336, 1340 (Fed. Cir. 2004) (internal citations and quotation marks omitted).

contract by simple acceptance . . . , constitutes an offer for sale under § 102(b).'"[73]

The "ready for patenting . . . condition may be satisfied in at least two ways: by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention."[74]

Defendants maintain the claimed invention was the subject of a commercial offer for sale, and sale, prior to the critical date, and the claimed invention was ready for patenting based on its actual reduction to practice before the critical date and engineering drawings of the system claimed in claim 3 also created before the critical date.[75]

Defendants first point to a March 7, 1991 videotape from an archive of BAE documents in Carrolton, Texas depicting "Phase 2" of BAE's efforts to develop a telecar system for American Airlines at the Dallas-Ft. Worth Airport.[76] At deposition, Staehs described the video as showing the system installed at BAE's "Luna Road" facility in operation, with telecars moving around a multi-level track.[77] Staehs' testimony also confirmed the system on the tape included all the elements of claim 3 of the '125

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[73] *Id.* at 1341 (alteration and omission in original) (quoting *Group One, Ltd. v. Hallmark Cards, Inc.*, 254 F.3d 1041, 1048 (Fed. Cir. 2001)); *see also id.* ("[A] communication that fails to constitute a definite offer to sell the product and to include material terms is not an 'offer' in the contract sense. *Restatement (Second) of Contracts* § 33(3) (1981) ('The fact that one or more terms of a proposed bargain are left open or uncertain may show that a manifestation of intention is not intended to be understood as an offer.').").

[74] *Pfaff*, 525 U.S. at 67-68.

[75] The '125 patent was filed October 28, 1992, making the critical date October 28, 1991.

[76] D.I. 338 at 4 (citing *id.*, Ex. MM).

[77] *Id.* at 4-5 (citing *id.*, Ex. J (Staehs Dep., Mar. 30, 2012) at 181-192 and 169-177 (describing the same system shown on a different tape)); *see also id.*, Ex. I at 100:19-20 ("Q. What was BAE's telecar prototype facility? A. Luna Road.").

patent.[78] After reviewing the video and drawings, defendants' expert, Kirtley, also opined the Luna road system met each of the limitations of claim 3.[79] Defendants note plaintiffs' validity expert, Dr. Marc Thompson, did not address the issue in his rebuttal report.[80]

Defendants also contend engineering drawings show the system, that would be claimed in claim 3 of the '125 patent, were prepared by the fall of 1990, including a September 1990 drawing which defendants argue appears to have been the model for Fig. 2 of the patent.[81]

Based on this evidence, defendants maintain there is no genuine issue of material fact that BAE had both reduced the invention to practice and "prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention" prior to the critical date, thus satisfying the "ready for patenting" prong set forth in *Pfaff*.[82]

With regard to the "commercial offer for sale" prong of *Pfaff*, defendants maintain prior to the critical date: BAE offered to sell the invention to United Airlines; BAE actually sold the invention to United; and BAE also offered to sell the invention to the City of Denver.[83]

The commercial offer of sale to United is purportedly evidenced by an

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[78] *Id.* at 5-6 (claim chart listing the elements of claim 3 and Staehs' associated testimony from *id.*, Ex. J at 171:24-174:12; 189:3-192:1).
[79] *Id.* at 6 (citing *id.*, Ex. C at ¶¶ 135-140).
[80] *Id.*
[81] *Id.* at 6-7 (citing *id.*, Ex. ZZ (engineering drawings) at GT0005151).
[82] *Id.* at 16.
[83] *Id.* at 17-18.

"Engineering Services Proposal" dated August 7, 1991.[84] The document recites it "contains a detailed response to United Air Lines' verbal request for an Engineering proposal to develop and design a baggage system for the new Denver International Airport."[85] Defendants note the proposal included the "track mounted equipment now in use on the existing prototype," and included the "permanent magnet decelerators,"[86] i.e., the claimed brakes. According to defendants, Staehs confirmed the language of the proposal referred to the Luna Road equipment, that the double sided brakes were on the Luna Road system at the time of the proposal, and United saw the system prior to the proposal:

> Q. [Referring to the Engineering Services Proposal:] And then it says, [t]he track mounted equipment includes linear motors and mounts, permanent magnet decelerators, electromagnet decelerators, all synchronous drives, all ramp assemblies and the mounting of all components?
>
> A. Yes.
>
> Q. So was all of that in place at the time of this proposal?
>
> A. Except electromagnet decelerators, we never did have to use them. We never found a use for them.
>
> Q. And so–
>
> A. Everything else was there.[87]
>
> Q. The–the permanent magnet retarders that acted on the fin–
>
> A. Yes.

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[84] *Id.*, Ex. HH ("Engineering Services Proposal for an Integrated Baggage Handling System in United Air Lines Facilities at Denver International Airport" by "BAE Automated Systems, Inc.").

[85] *Id.*, Ex. HH at 1.

[86] *Id.*, Ex. HH at 12.

[87] *Id.*, Ex. I at 104:19-105:5.

Q. –would that–would that have been put in place early at Luna Road?

[objection]

A. Oh, sure. We used them on–used them on the declines.

Q. On the declines.

A. Yeah, slow the cars down.

Q. So when the declines are built–

A. The magnets would have been on them.[88]

Defendants state the comprehensive proposal included hours' estimates, a detailed list of the "major system elements," time lines, the names of the BAE employees who would manage the project, and numerous pages describing in detail the proposed system.[89] The proposal concluded: "BAE recommends that United Air Lines authorize the start of the DIA baggage system engineering effort before the end of August, 1991."[90]

Defendants argue this proposal is more than sufficient to establish a commercial offer for sale of the invention well before the October 28, 1991 critical date.[91]

Defendants also allege BAE actually sold the invention to United prior to the critical date. Defendants state BAE prepared a "Situation Report" for the City of Denver in conjunction with a proposal to expand the system BAE had proposed for United to

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[88] *Id.*, Ex. I at 103:21-104:7; *see also id.*, Ex. I at 104:16-18 ("Q. And do you know if the folks from United had viewed that equipment[, at Luna Road,] at that time, the time of this proposal? A. I'm sure they had.").

[89] *Id.* at 8.

[90] *Id.*, Ex. HH at 41.

[91] *Id.* at 17.

cover the entire airport.[92] The report contains a "Chronology of Events" leading up to its preparation beginning with BAE's August 7, 1991 "Engineering Services Proposal" and reciting on September 9, 1991, "[United] Issues A/E Service Agreement to begin design of its DIA system."[93]

Defendants argue the Situation Report establishes BAE's offer to design and install the telecar system, including the subject matter of claim 3, was both made by BAE, and accepted by United prior to the critical date.[94] Defendants also maintain an October 31, 1991 letter from '125 patent inventor Gene DiFonso to Archie Lind of United confirms that, as of October 20, 1991, BAE had already spent $246,400 of United's money on "engineering, fabrication and installation labor (prototype components), materials, travel and facility modifications."[95] The letter continues, "[a]t the present rate of consumption (accelerating constantly), I expect that the limit of your present authorization will be reached before the end of November, 1991."[96] Defendants argue this language explains why BAE's purported offer to United did not have a price, contending the parties were proceeding on a series of spending authorizations, not a fixed price.[97]

Defendants contend the Situation Report establishes BAE's offer to design and install the telecar system was accepted by United prior to the critical date, and

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[92] *Id.*, Ex. GG ("Situation Report to United Airlines, Inc." "City of Denver Requirement Potential Integrated Baggage Handling System New Denver International Report"); *id.*, Ex. I at 213:7-214:8.
[93] *Id.*, Ex. GG at GT0000598.
[94] *Id.* at 8.
[95] *Id.* at 8-9 (citing *id.*, Ex. KK (Letter from DiFonso to Lind, Oct. 31, 1991) at GT0000631).
[96] *Id.*, Ex. KK at GT0000631.
[97] *Id.* at 17 n.5.

acceptance is further confirmed by DiFonso's October 31, 1991 letter to United.[98]

Defendants also argue BAE made a commercial offer to sell the patented system to the City of Denver. The chronology of events in the Situation Report includes a notation that on September 23, 1991, the "City of Denver asks BAE to prepare and present an outline of 'what could be done' to satisfy their integrated system requirement," and that on September 25, 1991, "BAE present[ed] a document entitled 'Discussion Topics . . . .' to City Representatives."[99] One of the conclusions of the Discussion Topics was "[a]n integrated baggage system for the New Denver International Airport can be installed and beneficially used by October, 1993."[100]

Defendants contend BAE formalized its offer to the City of Denver in a "Proposal for an Integrated Baggage Handling System at New Denver International Airport" dated October 9, 1991.[101] That proposal described the system as "[t]he integrated baggage handling system utilizing 'Telecar' destination coded vehicle technology,"[102] and included a payment schedule totaling $185,000,000.[103] Defendants maintain Denver's receipt of the October 9, 1991 proposal prior to the critical date is confirmed by an October 15, 1991 letter from DiFonso to United's Lind stating BAE's "proposal" was "delivered to the City and County of Denver on October 9, 1991."[104]

Defendants suggest this evidence also establishes BAE made a commercial offer for sale of the claimed system to the City of Denver prior to the critical date.

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[98] *Id.* at 17.
[99] *Id.*, Ex. GG at GT0000598.
[100] *Id.*, Ex. GG at GT0000609.
[101] *Id.*, Ex. II.
[102] *Id.*, Ex. II at GT0000571.
[103] *Id.*, Ex. II at GT0000590.
[104] *Id.* at 9 (citing *id.*, Ex. JJ (Letter from DiFonso to Lind, Oct. 15, 1991) at GT0000614.

Plaintiffs do not dispute defendants' evidence demonstrating the invention was ready for patenting prior to the critical date. Instead, they argue defendants fail to establish a commercial offer for sale, or sale, of the claimed invention was made prior to the critical date.

Plaintiffs maintain none of the documents cited by defendants contain a firm price, and each confirm only that the scope and price of the system was fluctuating wildly, by tens of millions of dollars.

The Engineering Services Proposal does not contain a price, with its introduction stating the "results of BAE's *detailed estimates*" were provided therein.[105] The estimates were of man-hours[106] and a delivery date was assumed, not guaranteed.[107]

A September 13, 1991 "Preliminary Operating Plan" from DiFonso to Robert Nelson, president of BAE, recited "[f]rozen system configuration and specifications" would be achieved by January 1992.[108] The document list of short-term goals includes "[d]efinitive specifications for: performance configuration controls software etc.[,]" and "[t]he results of this work will form a core of exhibits which will support *firm pricing* and full system contract."[109]

Plaintiffs note the October 7, 1991 Situation Report stated on September 19, 1991 "BAE delivers letter to City of Denver *declining to submit a bid for the integrated*

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[105] *Id.*, Ex. HH at 1 (emphasis added).
[106] *Id.*, Ex. HH at 2. No hourly rate was provided.
[107] *Id.*, Ex. HH at 2 ("We began . . . by creating an overall project schedule, *assuming* a December 1993 delivery date.") (emphasis added).
[108] D.I. 361, Ex. 7 ("Project 101 UAL/DIA Engineering Services Preliminary Operating Plan Department 45–Engineering") at GT000350.
[109] *Id.*, Ex. 7 at 6 (emphasis added).

airport system."[110] The document's conclusions recites October 1, 1991, November 4, 1991, and January 6, 1992 as the dates certain milestones must be met and states "[f]irm pricing of the integrated system would be *impossible* by the stated dates . . . ."[111] The Situation Report also does not contain any price.

Plaintiffs point out the October 9, 1991 proposal for an integrated baggage handling system at the Denver International Airport includes a "Preliminary Payment Schedule," and states "[a] payment schedule, based on *the upper range of BAE's pricing estimates*, is included for the City of Denver's information and planning. *Final system configuration and pricing will alter this table.* It may be used, however, as a gauge of initial monthly funding requirements."[112]

Plaintiffs note DiFonso's October 15, 1991 letter to Lind refers to potential changes in BAE's workload, "depending upon final configuration" of the system.[113]

An October 24, 1991 letter to William Smith, Manager Department of Public Works City and County of Denver, from DiFonso includes four different integrated systems, ranging in cost from $144 million to $194 million[114] That letter stated:

> Expecting significant escalation, we verbally advised the City of Denver that *a $155 to 185 million budgetary range* would be reasonable for a contemplated project utilizing Telecars as the integrating technology. One of the reasons for suggesting this range was BAE's knowledge that United's portion of the system was *still under active study and was missing elements* which would have to be added as work progressed.[115]

It also provided:

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[110] D.I. 338, Ex. GG at GT0000598 (emphasis added).
[111] *Id.*, Ex. GG at GT0000609 (emphasis added).
[112] *Id.*, Ex. II at GT0000589 (emphasis added).
[113] *Id.*, Ex. JJ at GT0000614.
[114] D.I. 361, Ex. 10 (Letter from DiFonso to Smith, Oct. 24, 1991).
[115] *Id.*, Ex. 10 at GT0000624 (emphasis added).

> During our October 9, 1991 meeting, you advised BAE that the City and County of Denver wished to consider a firm price for the integrated system, rather than authorize partial funding to support critical short-term schedule milestones. It was agreed that BAE would embark on an intensive estimating effort and *present firm prices at the earliest opportunity.*[116]

The October 31, 1991 letter from DiFonso to Lind mentioned the fourth ($194 million) integrated system and said: "[t]he forgoing table[, Schedule of Payments,] should be viewed as a *reasonable approximation* of project cash flow requirements *for the configuration we are currently discussing.*[117]

A November 12, 1991 letter from DiFonso to John Celmer of Bechtel Corporation stated: "[i]t is becoming increasingly apparent that–as we all rush to respond to Mr. Smith's various requests and to explain *the ongoing scope evolution*–it is unclear to most parties involved what scope of work and what assumptions form that basis of BAE's *pricing estimates.*"[118] The letter noted "[a]ll parties to our discussion recognize that the system's configuration *remains somewhat fluid.*"[119]

A November 13, 1991 contract between the City and County of Denver and BAE provided "the City is in the process of negotiating a contract, hereinafter called the Main Contract, with the Consultant, for the design, manufacture, construction and installation" of "an integrated automated airport baggage handling system (IABHS) . . . ."[120] Plaintiffs note there is no reference to any other contract other than "a professional

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[116] *Id.*, Ex. 10 at GT0000627 (emphasis added).

[117] D.I. 338, Ex. KK at GT0000632 (emphasis added).

[118] D.I. 361, Ex. 29 (Letter from DiFonso to Celmer, Nov. 12, 1991) at GT000266 (emphasis added).

[119] *Id.*, Ex. 29 at GT000267 (emphasis added).

[120] *Id.*, Ex. 12 ("Agreement Between City and County of Denver and BAE Automated Systems for Purchase of Integrated Airport Handling System (IABHS) Track and Engineering Services and Mobilization for the Design and Manufacture of the IABHS Denver International Airport") at DEN002648.

engineering services contract with the Consultant for *conceptual design work* for the IABHS."[121] The amount of the December contract was $20 million.[122]

The Main Contract, referenced in the December contract, was not entered into until May 3, 1992, more than six months after the critical date of the '125 patent, and had a price of $195,600,000.00.[123]

Plaintiffs cite the statement in *Pfaff* that the "*product* must be the subject of a commercial offer for sale,"[124] and argue the "prototype at Luna Road was plainly not the 'product.'"[125] That argument is unpersuasive. Defendants do not contend the actual prototype at Luna Road was offered for sale, rather that a system based on that prototype, which included the invention of claim 3 of the '125 patent was offered for sale. The Engineering Services Proposal to United specifically included the "track mounted equipment now in use on the existing prototype," including the "permanent magnet decelerators,"[126] and Staehs testified the language of the proposal referred to the equipment at Luna Road, that the double-sided brakes were on the Luna Road system at the time of the proposal, and United had seen that equipment.[127]

The court agrees with defendants that a commercial offer for sale was made to,

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[121] *Id.*, Ex. 12 at DEN002648 (emphasis added).

[122] *Id.*, Ex. 12 at DEN002651.

[123] *Id.*, Ex. 13 ("Contract Documents Including Specifications For City and County of Denver Department of Public Works Integrated Airport Baggage Handling System") at DEN002441, DEN002443.

[124] *Pfaff*, 525 U.S. at 67 (emphasis added).

[125] D.I. 361 at 13.

[126] D.I. 338, Ex. HH at 12.

[127] D.I. 338, Ex. I at 103-105. Plaintiffs aver BAE continued to own the Luna Road prototype until that test facility was shut down in the '90's and the prototype was disposed of. D.I. 361 at 13 (citing *Id.*, Ex. 31 (Dan Pockrus Dep., Aug. 31, 2011) at 15:8-25. To the extent plaintiffs argue that subject matter of claim 3 of the '125 patent was not on sale because the specific prototype at Luna Road was not offered, that argument is also unavailing as section 102(b) bars a patent where "*the invention* was . . . in public use or on sale . . . ." (emphasis added).

and accepted by, United. The Engineering Services Proposal was for a system that included the subject matter of claim 3. As evidenced by the Situation Report, United accepted BAE's offer, noting on September 9, 1991 that "UAL Issues A/E Service Agreement to begin design of its DIA system."[128] That United had begun paying for the claimed system is confirmed by DiFonso's October 31, 1991 letter to Lind stating that, by October 20, 1991, BAE had already spent $246,400 of United's money on "engineering, fabrication and installation labor (prototype components), materials, travel and facility modifications."[129]

Although plaintiffs maintain there was no offer for sale because there was no "fixed price" provided United, defendants point out lack of a fixed price is not necessarily fatal to an assertion of the on-sale bar.[130] Moreover, here BAE and United were proceeding based on a series of spending authorizations as demonstrated by DiFonso's October 31, 1991 letter:

> As of our October 20, 1991 accounting month closing, we have consumed approximately $246,400 in engineering, fabrication and installation labor (prototype components), materials, travel and facility modifications. At the present rate of consumption (accelerating constantly), I expect that the limit of *your present authorization* will be reached before the end of November, 1991. It is apparent that the *next authorization(s)* will need to recognize–in addition to Engineering–increasing requirements for tooling, long lead components/materials, manufacturing and associated efforts.[131]

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[128] D.I. 338, Ex. GG at GT0000598.

[129] D.I. 338, Ex. KK at GT0000631.

[130] D.I. 383 at 7 (citing *Zacharin v. United States*, 213 F.3d 1366, 1370 (Fed. Cir. 2000) ("The fact that . . . there was no fixed price . . . does not suffice to avoid the on-sale bar."); *Cardiac Sci., Inc. v. Koninklijke Philips Elecs. N.V.*, 2006 U.S. Dist. LEXIS 49750, at *13 n.3 (D. Minn. July 19, 2006) ("Even if the Distribution Agreement was considered not to have a fixed price, it still could qualify as an invalidating offer for sale."); *Special Devices Inc. v. OEA, Inc.*, 117 F. Supp. 2d 989, 996 (C.D. Cal. 2000) (stating "lack of a definite price in" offers "does not negate their commercial nature")).

[131] D.I. 338, Ex. KK at GT0000631 (emphasis added).

Consequently, the court determines BAE both offered for sale, and sold, a system incorporating claim 3 of the '125 patent to United prior to the critical date.

The court is not convinced, however, that defendants have established that a commercial offer for sale of the claimed system was made to the Denver prior to the critical date. As plaintiffs note, Difonso's October 24, 1991 letter to Smith of the Department of Public Works City and County of Denver included four different integrated systems, ranging in cost from $144 million to $194 million, and noted "BAE would embark on an intensive estimating effort and present firm prices at the earliest opportunity."[132]

A November 13, 1991 contract between Denver and BAE stated "the City has entered into a professional engineering services contract with the Consultant for *conceptual design work* for the IABHS."[133] A letter from DiFonso to Celmer dated the prior day, November 12, noted "Smith's various request and to explain *the ongoing scope evolution*" and "[a]ll parties to our discussion recognize that the system's configuration *remains somewhat fluid.*"[134] Viewing the evidence in the light most favorable to plaintiffs, the court determines defendants have not met their burden demonstrating a commercial offer for sale of the subject of claim 3 of the '125 patent was made to Denver.

D. Obviousness

Obviousness is a question of law based on underlying questions of fact.[135] "[A]

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[132] D.I. 361, Ex. 10 at GT0000624.
[133] *Id.*, Ex. 12
[134] *Id.*, Ex. 29 at GT000266, GT000267 (emphasis added).
[135] *Daiichi Sankyo Co., Ltd. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007) (citing *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1348 (Fed. Cir. 2000)).

'patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men.'"[136] "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results."[137] "If a person of ordinary skill in the art can implement a predictable variation, and would see the benefit of doing so, § 103 likely bars its patentability. Moreover, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person's skill."[138]

Defendants rely on the opinion of its technical expert, Kirtley, that claim 3 of the '125 patent would have been obvious in view of a number of different combinations of prior art references.[139] Among these was the combination of a patent to Miller[140] for a material handling car with a fin extending underneath that was slowed with a device that physically "pinched" the fin and a patent to Demukai[141] for a system that applied braking forces to a fin using a double-sided magnet.

Kirtley opined it would have been obvious to substitute Demukai's double-sided magnetic brakes for Miller's pinch brake, and the combination would include each of the

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[136] *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 415-16 (2007) (omission in original) (quoting *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 152-53 (1950)).
[137] *Id.* at 416.
[138] *Id.*
[139] D.I. 338, Ex. C (Opening Expert Report of James L. Kirtley, Jr.).
[140] *Id.*, Ex. QQ (Miller).
[141] *Id.*, Ex. RR (Demukai).

limitations of claim 3.[142] Kirtley states it was commonly known that opposed magnets will create a force in a plate passing between them.[143] Defendants argue because one of skill in the art could easily have substituted Demukai's double-sided magnetic brake for Miller's pinch brake to achieve a predictable result (braking the car), claim 3 is invalid under 35 U.S.C. § 103(a).

Kirtley also opined it would have been obvious to substitute the double-sided braking systems of Demukai or a similar patent to Becker[144] for the single-sided motors and brakes of the prior art BAE system.[145] Defendants note plaintiffs' validity expert, Thompson, offered no opinion on this combination. Thompson testified he did not address any of Kirtley's obviousness opinions concerning BAE's systems in view of other prior art references because he was not asked to, and he did not inquire as to why he was not asked to opine on some grounds of invalidity.[146] Defendants assert because plaintiffs have no admissible evidence to question Kirtley's conclusion of obviousness, they are entitled to summary judgment.[147]

Plaintiffs first argue defendants ignore the file history, which purportedly

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[142] *Id.*, Ex. C at ¶¶ 92-97.

[143] *Id.*, Ex. C at ¶ 42.

[144] Defendants cite D.I. 338, Ex. S for the patent to Becker. That exhibit, however, is part of a deposition transcript unrelated to that patent, and the court did not locate the Becker patent in the exhibits to defendants' brief. Because, as discussed below, the court need not address the combination including Becker, this omission is irrelevant.

[145] Defendants cite D.I. 338, Ex. C at ¶¶ 135-140 for Kirtley's opinion on this combination. Those paragraphs recite his opinion concerning invalidity under 35 U.S.C. § 102(b). The portion of Kirtley's report relating to his obviousness opinion regarding this second set of prior art references is found at D.I. 338, Ex. C at ¶¶ 117-126.

[146] D.I. 338, Ex. Q (Thompson Dep., Aug. 8, 2012) at 303:1-304:9.

[147] *Id.* at 20 (citing *U.S. v. Donovan*, 661 F.3d 174, 188 (3d Cir. 2011) ("Faced with a motion for summary judgment citing record evidence . . . [the non-moving party] cannot rely simply on the mere possibility that a jury would find [the moving party's] evidence insufficient.").

contradicts them.[148] In a somewhat confusing argument, plaintiffs cite the examiner's rejection of application claim 10 (issued claim 3) as obvious in view of three prior art references.[149] Plaintiffs briefly describe those references, then state application claim 10 was amended and was allowed as claim 3.[150] After citing *Genzyme Corp. v. Transkaryotic Therapies, Inc.*[151] for the proposition that the examiner is presumed to have done his job unless there is evidence to the contrary, plaintiffs argue defendants, and their expert, do not show the examiner erred, and that defendants rely upon references that are "not as good" as those before the examiner during prosecution.[152] Plaintiffs' argument does not support their position. First, as noted above, every patent claim issued was allowed by a patent examiner and claims are, nevertheless, not infrequently determined to be invalid by the courts. Also, according to defendants, the prior art addressed in their motion was not before the examiner. Consequently, there was no opportunity for the examiner to have erroneously allowed claim 3 to issue in the face of those references.

Plaintiffs do not clearly differentiate their arguments directed to Kirtley's opinion regarding the combination of Miller in view of Demukai versus his opinion regarding the combination of prior BAE automated systems in view of Demukai or Becker. As noted herein, Thompson provided no opinion on obviousness arguments based on a

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[148] D.I. 361 at 16-17.
[149] *Id.* at 16.
[150] *Id.*
[151] 346 F.3d 1094, 1103 n.3 (Fed. Cir. 2003).
[152] D.I. 361 at 17. Plaintiffs return to this curious argument on the next page of their brief, stating "the examiner had before him Veraart, a flat magnet system like earlier BAE systems. He had before him Japanese '108 and '804, with vertical plates. He had before him Matsui, with a car and wheels. These are better references tha[n] the defendants offer. Yet they fail to address Veraart or Matsui." *Id.* at 18. It is unclear why defendants should have addressed prior art not relied upon in their motion for summary judgment.

combination of prior BAE automated systems.

The invention in Miller is described as relating to a:

> brake structure designed particularly for use in connection with pleasure railways and operable from a distance to gradually check the speed where necessary and for smoothly and gradually bringing cars to a stop at the end of a trip without jarring or other inconvenience to the passengers, and without undue strains upon the cars or track structure.[153]

Plaintiffs contend Miller describes a mechanical friction brake for "bringing cars to a stop," in contrast to eddy current brakes, like the ones claimed by the '125 patent, which cannot bring a car to a stop because the generation of an eddy current requires relative velocity and the braking force drops as the car slows.[154] The '125 patent, therefore, describes the magnetic brakes as "deceleratfing]"[155] a car, not "stopping" a car. Plaintiffs submit that using the magnets of Demukai in place of Miller's friction brake would, therefore, frustrate the Miller's purpose of stopping a car.

As the Miller citation explains, however, stopping a car is not the sole purpose of that invention which "relates to brake structures . . . operable from a distance *to gradually check the speed where necessary* and for smoothly and gradually bringing cars to a stop at the end of a trip . . . ."[156] Miller reiterates "the motion of the car *can be checked to the degree desired* depending upon the braking pressure exerted."[157]

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[153] D.I. 338, Ex. QQ at 1:1-9.

[154] D.I. 361 at 17 (citing *id.*, Ex. 15 (Thompson expert report) at 5 (describing generation, and braking effects, of eddy currents); *id.*, Ex. 30 (Pribonic Dep., Aug. 2, 2011) at 67-68 (testifying cars cannot be stopped using magnetic brakes); *id.*, Ex. 22 (Jasper Dep.) at 29-30 (testifying cars cannot be stopped using magnetic brakes)). Plaintiffs note defendants' expert, Kirtley, agrees: "The energy must come from the motion of the conductor and so a retarding force, opposing that motion, is produced." D.I. 338, Ex. C at ¶ 26.

[155] '125 patent, 5:22-42.

[156] D.I. 338, Ex. QQ, Miller at 1:1-6 (emphasis added).

[157] *Id.*, Ex. QQ, Miller at 2:7-10.

Therefore, the court determines substituting magnetic brakes that are not capable of stopping a car would not "frustrate Miller's purpose" as plaintiffs argue.[158]

The invention in Demukai is described as a:

> semiautomatic sliding door device . . . equipped with a braking device comprising permanent magnets on the outer framework and a braking plate made of copper or aluminum sheets on the sliding door.[159]

Plaintiffs first argue Demukai is for a sliding door and has no wheels and no car.[160] That argument is immaterial as the base reference, Miller, includes those features as Kirtley explains in his expert report.[161] Plaintiffs next argue Demukai uses weak magnets mounted on a U-shaped channel that are unsuitable for the application described in the '125 patent, rather than magnet assemblies each with its own mounting bracket and plate.[162] Thompson opines Demukai "does not teach 'a mounting bracket, a plate attached to said mounting bracket, and a series of magnets bounded to said plate.'"[163] The only support Thompson gives for his opinion is that:

> The type of mechanical construction shown in Figure 4 of Demukai show *small magnets* and the mechanical forces between them are modest. Demukai has magnets mounted to a U-shaped channel which is a mechanical construction which would be valid for *small magnets with small forces*. Such a channel would be of insufficient strength and stiffness to support magnetic brakes for braking a material-moving device such as in the '125 patent.[164]

Despite that criticism, Thompson acknowledged at deposition that one of skill in the art

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[158] The court notes there is no citation to any expert's report, or testimony, to support plaintiffs' "frustration" of purpose argument.

[159] *Id.*, Ex. RR, Demukai, Abstract.

[160] D.I. 361 at 17. There is also no citation to any expert's report, or testimony, to support this criticism of Demukai nor does Thompson's report include this criticism.

[161] D.I. 338, Ex. C at ¶¶ 89, 94 (claim charts).

[162] D.I. 361 at 17 (citing *id*, Ex. 15 at 10-11).

[163] *Id.*, Ex. 15 at 11.

[164] *Id.*, Ex. 15 at 11 (footnotes omitted) (emphasis added).

at the time of the invention wanting to employ Demukai's double-sided brake in the Miller system would have known to use larger magnets.

> Q. All right. So let's suppose that one wanted to apply the magnetic braking of Demukai to a system like Miller. A person of ordinary skill in the art would know that they need larger magnets, right?
>
> * * *
>
> [objection]
>
> A. Yeah, I think somebody of ordinary skill would–would know that.[165]

Defendants cited this acknowledgment in their opening brief,[166] and plaintiffs did not present an alternative interpretation of this testimony. Thompson also opines that the U-shaped channel in which the magnets are mounted in Demukai are insufficient in strength and stiffness. At deposition, however, after a discussion concerning potential difficulties of using a U-shaped channel to build the claimed brakes of the '125 patent, he conceded one of skill in the art would be familiar with the use of plates to mount magnets at the time of the invention.

> Q. It's pretty common before the '125 patent to use plates to support magnets if you wanted them in a system, isn't that true?
>
> [objection]
>
> A. The question is it–was it common to use plates?
>
> Q. Yeah, particularly backing plates.
>
> A. Back iron, yes.[167]

Plaintiffs' only argument concerning Miller is that using the magnets of Demukai

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[165] D.I. 338, Ex. Q at 203:17-204:6.
[166] *Id.* at 19 (citing *id.*, Ex. Q at 203-204).
[167] *Id.*, Ex. Q at 208:10-19.

in place of Miller's friction brake would frustrate Miller's purpose of stopping a car. In addition to being unsupported by any expert, that argument is contradicted by the Miller specification. Plaintiffs' arguments concerning Demukai, based on Thompson's report, are that it used small magnets and the U-shaped channel in which those magnets were mounted was unsuitable for the application described in the '125 patent. Each of those arguments was contradicted by Thompson's testimony that one of skill in the art at the time of the '125 patent would have known to use larger magnets and use backing plates to mount magnets.

Kirtley's expert report includes a claim chart detailing the elements of claim 3 of the '125 patent disclosed in Miller and Demukai, describes those references, and explains one of skill in the art would have been motivated at the time of the application for that patent "to substitute the magnetic retarders operating on a fin passing between them, as shown in Demukai, for the friction brakes acting on a fin passing between them, as in Miller."[168] Kirtley opines "[o]ne would have been motivated to make this substitution in order to, for example, employ a contactless braking system that would not have worn out as the friction brakes would have."[169] Plaintiffs have no evidence to create a question of fact regarding this combination.

In their brief, plaintiffs make no specific argument concerning Kirtley's invalidity opinion based on the prior art BAE system in view of Demukai.[170] Thompson offered no opinion whatsoever on this combination, testifying he had not been asked to so opine.

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[168] *Id.*, Ex. C at ¶¶ 84-85, 89, 92-97.

[169] *Id.*, Ex. C at ¶ 97.

[170] Plaintiffs merely point out citation to the incorrect paragraphs of Kirtley's report in defendants' opening brief, as the court noted above.

Plaintiffs' contentions concerning Demukai with regard to this combination would be the same, unavailing, argument discussed above. Kirtley's expert report again includes a claim chart detailing the elements of claim 3 of the '125 patent disclosed in the prior art BAE system and Demukai, and describes those references.[171] Plaintiffs again have no evidence to create a question of fact regarding this combination.[172]

Lastly, plaintiffs contend defendants provided evidence of secondary considerations of non-obviousness.[173] Plaintiffs aver defendants have made statements that magnetic brakes are a commercial success and satisfy a long-felt need. According to Alexander Weber, Six Flags' COO,[174] "[t]he application of the linear induction launch coaster, along with the invention of the magnetic brake system, has truly rescaled the topography of roller coasters. . . . This has allowed for the creation of the mega launch coaster . . . ."[175] Also, Lamond H. Jasper, Jr., Cedar Fair's corporate vice-president of safety and engineering,[176] and Rob Decker, Cedar Fair's vice president of planning and design, were quoted in a May 8, 2003 online article discussing the benefits of magnetic-braking systems used in large roller coasters.[177] That evidence is merely that certain individuals associated with defendants stated magnetic brakes provide certain advantages; it does not demonstrate those advantages

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[171] D.I. 338, Ex. C at ¶¶ 93-94, 96, 117-120, 122, 124-126.

[172] Having made this determination, the court need not address Kirtley's opinion relating the prior art BAE system in view of Becker.

[173] D.I. 361 at 19 (citing *Procter & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 997 (Fed. Cir. 2009) ("When present, such factors 'may often be the most probative and cogent evidence [of non-obviousness] in the record.'" (alteration in original) (quoting *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.3d 1530, 1538 (Fed. Cir. 1983))).

[174] *Id.*, Ex. 23 (Weber Dep., April 2, 2013) at 10:21-11:4.

[175] *Id.*, Ex. 25 (Weber Ex. 8); *id.*, Ex. 23 at 73-80, 97-98.

[176] *Id.*, Ex. 22 (Jasper Dep) at 8:13-20.

[177] *Id.*, Ex. 24 (Jasper Ex. 27) at 2-4; *id.*, Ex. 22 at 218:6-20 (Jasper confirming his statements about magnetic brakes in the online article).

are due to the magnetic brakes claimed in claim 3 of the '125 patent. "Evidence of commercial success, or other secondary considerations, is only significant if there is a nexus between the claimed invention and the commercial success."[178] Also, "if the feature that creates the commercial success was known in the prior art, the success is not pertinent."[179] The court notes plaintiffs' position that the importance of magnetic brakes is a secondary consideration of non-obviousness seems contrary to their prior argument concerning the proper identification of inventors that Chung's suggestion of adding double sided brakes to BAE's prior art system added nothing "new" and that contribution was merely "prior art." Nevertheless, the court determines plaintiffs' secondary considerations argument is not persuasive.

Consequently, the court finds claim 3 of the '125 patent invalid as obvious in light of both the combination of Miller in view of Demukai and the prior art BAE system in view of Demukai.

V. INFRINGEMENT OF THE '125 PATENT

Plaintiffs move for summary judgment that certain accused roller coaster rides infringe claim 3 of the '125 patent.[180] Defendants move for summary judgment that certain, different, accused roller coaster rides do not infringe claim 3 of the '125 patent.[181]

"To establish infringement, every limitation set forth in a patent claim must be found in an accused product or process exactly or by a substantial equivalent. The

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[178] *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311-12.
[179] *Id.* at 1312.
[180] D.I. 327.
[181] D.I. 339.

patentee bears the burden of proving infringement by a preponderance of the evidence."[182]

> To satisfy the summary judgment standard, a patentee's expert must set forth the factual foundation for his infringement opinion in sufficient detail for the court to be certain that features of the accused product would support a finding of infringement under the claim construction of the court, with all reasonable inferences drawn in favor of the nonmovant.[183]

"Summary judgment of noninfringement is . . . appropriate where the patent owner's proof is deficient in meeting an essential part of the legal standard for infringement, because such failure will render all other facts immaterial."[184]

In a separate opinion, the court granted, in part, defendants' motion to exclude the testimony of plaintiffs' expert, Mark T. Hanlon.[185] Because the court struck Hanlon's expert report, the opinions contained therein will not be considered either in support for plaintiffs' motion or in opposition to defendants' motion.

To reiterate, claim 3 of the '125 patent recites:

> 3. Material handling car and track assembly, said assembly comprising:
>
> a car having wheels mounted thereon, and
>
> a track having two parallel rails, said wheels being adapted to roll on said rails to facilitate movement of said car along said track,
>
> a metal fin extending from an underside of said car and lengthwise of said car, and

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[182] *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1535 (Fed. Cir. 1991) (internal citations omitted).

[183] *Intellectual Science & Tech, Inc. v. Sony Elec., Inc.*, 589 F.3d 1179, 1183 (Fed. Cir. 2009) (citing *Arthur A. Collins, Inc. v. N. Telecom Ltd.*, 216 F.3d 1042, 1047-48 (Fed. Cir. 2000)); *id.* at 1185 ("Even if the elements are common components, the record must specifically identify the infringing features of those components and the reason that one of skill in the art would recognize them as infringing. Without that further identification and explanation, a reasonable juror would not be able to determine that those allegedly infringing components are actually present.").

[184] *TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360, 1369 (Fed. Cir. 2002).

[185] D.I. 343 (Defendants' Motion to Exclude the Testimony of Mark T. Hanlon).

> opposed magnet assemblies mounted between said tracks, said opposed assemblies being spaced from each other by a distance exceeding the thickness of said fin to define a gap between said magnet assemblies, said fin being adapted to pass through said gap in travel of said car over said magnets, each of said assembl[ies] is comprising a mounting bracket, a plate attached to said mounting bracket, and a series of magnets bonded to said plate, said magnets on said plate being disposed side by side in a direction of travel of said car on said rails, and said magnets being operative sequentially to act on said fin to impart braking to said car.[186]

That claim, therefore, claims a wheeled car on a track with parallel rails, with a metal fin extending from the underside of the car. Two opposed magnet assemblies mounted on the track allow the fin to pass between them. The result is braking of the car. The Honorable Leonard P. Stark determined at claim construction that the preamble of claim 3 is not a limitation.[187] He also determined the underside of the car need not be the bottom-most part of the car, and the fin need not be vertical.[188]

A. Plaintiffs' Motion for Summary Judgment of Infringement

Plaintiffs move for summary judgment that the following accused rides infringe claim 3 of the '125 patent: the Beast, the Nighthawk, the American Thunder and the Apocalypse (identical rides), the two Dark Knight rides, the El Toro, the New Texas Giant, and the Prowler.[189] Plaintiffs state neither defendants' interrogatory responses nor Kirtley's expert rebuttal report offer any facts as to why those rides do not

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[186] '125 patent, claim 3.
[187] D.I. 245 at 6-9.
[188] D.I. 245 at 9-10.
[189] D.I. 328 at 1. Nowhere in either plaintiffs' opening or reply briefs is the New Texas Giant discussed other than reciting the ride's name on the first page of their opening brief as among the accused rides as to which plaintiffs move for summary judgment.

infringe.[190] Plaintiffs maintain evidence from witnesses for the defendants, and from defendants' documents, demonstrate each ride has wheeled cars riding on parallel tracks, and a metallic fin attached to the underside of each car that projects into a gap between two magnet assemblies mounted on brackets secured to the track between the rails of the track.[191] Plaintiffs further contend each ride uses a series of magnets to act on the fin to brake the car.[192] This evidence purportedly satisfies the preponderance of the evidence standard to show infringement.[193]

Defendants argue at no point during discovery did plaintiffs articulate their infringement contentions. They state neither plaintiffs' interrogatory answers nor their infringement expert report provide any explanation as to how any ride infringes claim 3 of the '125 patent.[194] For each of the rides at issue in plaintiffs' motion, defendants argue Hanlon's report does not fulfill the requirement of specifically identify the infringing features of the accused products and explain why they are infringing. In the face of that purported deficiency, defendants contend plaintiffs improperly rely on attorney argument to read the claim limitations on the accused product.[195] Finally, defendants maintain summary judgment must be denied because claim 3 is indefinite due to its recitation of "a track," and subsequent requirement that the magnets be between plural "tracks."[196]

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[190] *Id.* (citing *id.*, Ex. B (Responses to Plaintiffs' First Set of Interrogatories (Nos. 1-13)); *id.*, Ex. C (Rebuttal Expert Report of James L. Kirtley, Jr.)).

[191] *Id.*

[192] *Id.*

[193] *Id.*

[194] D.I. 369 at 1.

[195] *Id.* at 7 (citing *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009) (noting attorney argument is not evidence)).

[196] *Id.* at 8.

In support of their contention that defendants' interrogatory responses and rebuttal expert report fail to offer any facts in support of non-infringement, plaintiffs cite defendants' response to Interrogatory 4 that asked for facts supporting defendants' contention of non-infringement of the '125 patent.[197] The cited interrogatory response explains, however, that the request is "premature prior to Plaintiffs' identification of their infringement positions . . . ."[198] Defendants assert plaintiffs did not actually identify their infringement positions at any point during discovery.[199] Plaintiffs contest that assertion, citing responses to Interrogatory 2 on September 20 and September 27, 2007 which named rides and provided claim charts.[200] The responses said Busch literally infringed and Six Flags and Cedar Fair infringed literally and under the doctrine of equivalents. Plaintiffs note they supplemented their responses on July 14, 2009, identifying additional rides.[201] Finally, plaintiffs' responses were supplemented again on September 2, 2011 again identifying more rides.[202] Those responses also identify transposition of the fin and magnet assemblies as an infringement under the doctrine of equivalents.[203]

Plaintiffs also quote Kirtley's expert rebuttal report as "identif[ing] my opinions on the allegations of infringement of the '125 and '237 patents to date,"[204] but argue he offers no facts to rebut plaintiffs' infringement contentions: "[Kirtley] is silent about the

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[197] D.I. 328 at 1.
[198] *Id.*, Ex. B at 11.
[199] D.I. 369 at 4.
[200] D.I. 377 at 7 (citing *id.*, Ex. W at 2-4 re Busch; D.I. *id.*, Ex. X at 4-12 re Six Flags and Cedar Fair).
[201] *Id.* (citing *id.*, Ex. Y at 2-3 re Busch; *id.*, Ex. Z at 2-10 re Cedar Fair).
[202] *Id.* at 7-8 (citing *id.*, Ex. AA at 3-4 re Busch; *id.*, Ex. BB at 10 re Six Flags and Cedar Fair).
[203] *Id.* at 8 (citing *id.*, Ex. AA at 3-4; *id.*, Ex. BB at 6-8, 10).
[204] D.I. 328, Ex. C at 4.

rides addressed in this motion."[205] Defendants dispute Kirtley's alleged "silence" and maintain he specifically identified the deficiencies in the Hanlon report, stating:

> I have reviewed Mr. Hanlon's analysis of this ride and find that he fails to specifically identify structures in the accused product that correspond to the claim elements. . . . It is unclear what structures in the accused ride are purported to meet the claim limitations. For this reason, it is impossible to provide a meaningful response to the infringement allegations.[206]

Although defendants do not direct the court to any supplementation of their response to plaintiffs' Interrogatory 4, the court agrees Kirtley was not "silent" about the rides at issue here. He stated no meaningful response could be given to Hanlon's report due to the deficiencies of that report. As noted above, the court agrees Hanlon's expert report is deficient and has struck that report.

Defendants contend plaintiffs improperly rely on attorney argument to provide the support for their summary judgment motion missing in Hanlon's expert report. Plaintiffs argue this is not the case. They note a summary judgment movant may cite "depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for purposes of the motion only), admissions, interrogatory answers, or other materials" to support summary judgement.[207] Plaintiffs maintain they have relied on such materials rather than merely presenting unsupported attorney argument. Plaintiffs state of the 21 exhibits, A-U, attached to their opening

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[205] *id.* at 14.

[206] D.I. 334, Ex. D at 18 (regarding the Beast ride); *see also id.* at 25, 45, 49, 50, 59, 62 (regarding the other rides at issue).

[207] D.I. 377 at 1 (quoting FED. R. CIV. P. 56(c)(1)(A)).

brief only exhibit D, Hanlon's report, was objected to by defendants.[208] Indeed, the statement of facts in defendants' responsive brief only mentions Hanlon's report, states the report does not provide explanations to support his conclusions, and notes defendants had moved to exclude Hanlon's testimony on that basis.[209]

Defendants also argue plaintiffs' withholding of the details of their infringement contentions prevented defendants' technical expert from being able to evaluate those details and prevented defendants from challenging plaintiffs' experts with this new information during the expert discovery period.[210] Plaintiffs response to this argument is to characterize it as hypocritical in light of defendants' failure to acknowledge plaintiffs' responses to defendants' Interrogatory 2, and the subsequent supplementation of those responses.[211] Those responses, however, do not identify the evidence plaintiffs now rely on, apparently for first time in their opening brief. The court agrees with defendants that by not disclosing the specific evidentiary support for their infringement contentions until this time, defendants have been deprived of a meaningful opportunity to respond to that evidence.[212] As such, the court denies plaintiffs' motion for summary judgment of infringement.

Finally, for the reasons explained above, the court has granted defendants'

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[208] *Id.* at 2 (citing FED. R. CIV. P. 56(c)(2) ("A party may object that the material cited to support or dispute a fact cannot be presented in a form that would be admissible in evidence.")). Plaintiffs also maintain Hanlon's report is minimally cited in their opening brief, and on points purportedly corroborated by defendants' testimony or documents. D.I. 377 at 8.

[209] *See* D.I. 369 at 2. Hanlon's report is also the only evidence of record cited by defendants in the sections of their opposition brief specifically discussing the rides at issue.

[210] D.I. 369 at 7-8.

[211] D.I. 377 at 8.

[212] *See generally Atrazeneca AB v. Mutual Pharm. Co., Inc.*, 278 F. Supp. 2d 491, 509 (E.D. Pa. 2003) ("The carefully orchestrated pretrial process was designed to flush out each party's contentions during discovery, so as to allow fact discovery, expert opinions, and dispositive motions, in that order.").

motion for summary judgment of invalidity of claim 3 of the '125 patent due, in part, to the plain error contained with regard to that claim's recitation of "track" and the plural "tracks." In light of the court's invalidity determination on that, or the alternative reasons set forth above, defendants could not be found to infringe that invalid claim. Even if the court's determination of invalidity due to plain error is incorrect, a jury would need to decide whether the magnets are positioned "between" whatever "tracks" actually means.[213] For that additional reason, the court denies plaintiffs' motion.

B. Defendants' Motion for Summary Judgment of Non-Infringement

Defendants describe the car and brake assembly of claim 3 of the '125 patent as having the following configuration: a metal slider or fin is mounted to the bottom of the car and magnet assemblies (consisting of a bracket holding two rows of magnets with a gap between them) are mounted between the wheels of the car or the rails of a track on which the car runs.[214] Braking forces are applied to the car when the fin passes through the gap between the magnets.[215] Defendants state they have produced detailed drawings showing that many accused rides have braking systems lacking one or more of the limitations of claim 3.

Plaintiffs' expert report, authored by Hanlon, lists forty-one amusement park rides as infringing claim 3 of the '125 patent; twenty-six rides are accused of literally infringing the claim and fifteen are accused of infringement under the doctrine of

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[213] D.I. 369 at 8.

[214] D.I. 340 at 1 (footnote omitted). Defendants reiterate their argument that claim 3 recites magnet assemblies "between said tracks," a term lacking proper antecedent basis in the claim that renders the claim indefinite. They note plaintiffs argument that this language means "between said rails" and generally adopt plaintiffs' interpretation in their non-infringement motion. *Id.* at 1 n.1.

[215] *Id.* at 1.

equivalents.[216] Defendants move for summary judgment of non-infringement on a majority of the accused rides, listed below.

Defendants state, for purposes of non-infringement of the asserted claims, the accused rides are not unique, each falls into one of three overarching categories based on the relationship between the car, the track, and the braking system.[217] Those categories are:

(1) rides with opposed magnet assemblies mounted to the car and fins mounted to the track structure, purportedly the opposite, or reverse, of the claimed arrangement;

(2) rides with one or more fins mounted on the car, but with magnet assemblies mounted above or below the rails, rather than "between" the rails, as the claim requires, and

(3) rides with brake systems that do not include a fin and/or magnet assemblies at all.[218]

The rides in the first category, those with the "reverse" arrangement, are alleged to infringe under the doctrine of equivalents, the rides in the second and third category are accused of literally infringing.[219]

Defendants state the accused rides with magnetic assemblies mounted on the car accused under the doctrine of equivalents are: Daredevil Dive, Goliath, Green Lantern, Half Pipe, Intimidator, Intimidator 305, Journey to Atlantis, Kinda Ka, Manta, Maverick, Nitro, Superman: Escape from Krypton, Top Thrill Dragster, Verbolten, and

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[216] D.I. 334, Ex. E (Expert Witness Report of Mark T. Hanlon P.E. PMP) at i-iii.
[217] D.I. 340 at 4.
[218] *Id.*
[219] D.I. 344, Ex. E at 7-8.

Vertical Velocity.[220]

Defendants state the rides accused of literal infringement with magnet assemblies above or below the rails include two categories of rides. The first category is an "inverted" roller coaster, where the cars hang from the track structure and the magnet assemblies are positioned below the rail. The accused inverted roller coasters are: Patriot, Possessed, Silver Bullet, Steel Venom, Tatsu, Volcano, and Wicked Twister.[221] The second category is a traditional "sit down" roller coaster where, the fin is mounted beneath the car. Several accused sit down roller coasters have two horizontal fins above the rails. The accused traditional sit down roller coasters with this configuration are: Diamondback, Griffon, Sheikra, Xcelerator,[222] and X-Flight.[223] Other accused sit down roller coasters have a vertical fin beneath the car, but magnets above, not between, the rails. The accused traditional sit down roller coasters with this configuration are: Batman & Robin: The Chiller, Mr. Freeze, Pony Express, and Sierra Sidewinder.[224]

Defendants contend three rides accused of literally infringing do not employ a metal fin and opposed magnet for braking at all. They aver the accused roller coasters

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[220] D.I. 340 at 4. Defendants point out Hanlon's expert report does not include Vertical Velocity, Manta, Verbolten, or Intimidator 305 as alleged to infringe under to doctrine of equivalents. Defendants aver Hanlon testified at deposition that, in his opinion, those rides infringe claim 3 of the '125 patent under the doctrine of equivalents and were unintentionally omitted from his report. *Id.* at 4 n.3 (citing *id.*, Ex. P (Hanlon Dep., Aug. 10, 2012) at 204-12). The court notes exhibit P to defendants' brief contains portions of Hanlon's August 10, 2012 deposition transcript. The portions of the attached transcript do not include the pages cited by defendants. In light of plaintiffs not contesting defendants' representation, and the court striking Hanlon's expert report, this omission is not relevant.

[221] *Id.* at 5-6.

[222] Defendants state although plaintiffs accuse Xcelerator of literal infringement, the ride actually has the "reverse" arrangement. *Id.* 7 n.4.

[223] *Id.* at 6-7.

[224] *Id.* at 7.

V2 and Vertical Velocity have linear synchronous motors mounted beneath the cars that both propel vehicles along the track and act as brakes.[225] Defendants claim the accused Poltergeist roller coaster does not use magnetic brakes at all, relying instead on traditional friction brakes.[226]

Defendants maintain plaintiffs cannot establish each element of claim 3 of the '125 patent is met by any accused ride in the first overarching category, i.e., those with the reverse arrangement having opposed magnet assemblies mounted to the car and fins mounted to the track structure.[227] Defendants first assert there is an absence of proof due to Hanlon's failure to explain how those rides might include structures that are equivalent to the limitations of the asserted claims.[228] Additionally, defendants argue to find equivalence would entirely vitiate the claim language requiring a fin "extending from an underside of said car" and "opposed magnet assemblies mounted between said tracks."[229] Finally, defendants contend the doctrine of equivalents cannot be used to expand a patent claim to cover a foreseeable alteration such as this.[230]

Plaintiffs maintain the only part of the asserted claim not literally present for this group of rides is that the fin does not extend "from an underside of said car . . . ."[231] They state the evidence in support of their equivalence argument is "the defendants' brake manual, and Mr. Hanlon."[232]

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[225] *Id.*
[226] *Id.*
[227] *Id.* at 9.
[228] *Id.*
[229] *Id.* at 10.
[230] *Id.* at 12.
[231] D.I. 360 at 5.
[232] *Id.* at 20.

According to the Federal Circuit, to satisfy its burden under the doctrine of equivalents:

> *"a patentee must . . . provide particularized testimony and linking argument* as to the 'insubstantiality of the differences' between the claimed invention and the accused device or process, or with respect to the function, way, result test when such evidence is presented to support a finding of infringement under the doctrine of equivalents. *Such evidence must be presented on a limitation-by-limitation basis.* Generalized testimony as to the overall similarity between the claims and the accused infringer's product or process will not suffice."[233]

Because the court has struck Hanlon's expert report, plaintiffs have no "particularized testimony and linking argument" to support their assertion of infringement under the doctrine of equivalents. Consequently, the court grants defendants' motion for summary judgment of non-infringement of the accused rides having magnet assemblies mounted to the car and fins mounted to the track structure.[234]

Defendants contend the accused rides in the second overarching category of accused rides, i.e., those with one or more fins mounted on the car, but with magnet assemblies mounted above or below the rails, cannot literally infringe because none of those rides has magnet assemblies "between" the rails of the track as the claim requires.[235]

Because "between" was not construed during claim construction, defendants state the ordinary meaning must be applied. Citing a dictionary, defendants maintain

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[233] *AquaTex Indus., Inc. v. Techniche Solutions*, 479 F.3d 1320, 1328 (Fed. Cir. 2007) (emphasis and omission in original) (quoting *Texas Instruments, Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1567 (Fed. Cir. 1996)).

[234] In light of this determination, the court need not address defendants' alternative arguments based on claim vitiation and foreseeable alteration.

[235] D.I. 340 at 12.

"between" ordinarily means "in an intermediate position in relation to two other objects."[236] They contend this meaning is consistent with the '125 patent which explains "the driving force imparted to the slider 12 by the motors 16 is on about the same level as the horizontal wheels" and, therefore, "there is produced substantially only a forward thrust, without a turning moment imparted to the travel wheels tending to lift the wheels off the track."[237] Defendants conclude the linear motors (and, therefore, the magnet assemblies) are at the same level as the rails and wheels so unwanted torque on the car is avoided.[238]

Defendants also argue the prosecution history of the '125 patent supports its purported ordinary meaning of "between." In response to an invalidity rejection over prior art that included linear motors, the patentee amended the specification and claims, stating "[the cited references] fail to show or suggest the particular arrangement of linear motors and car components set forth in amended claim 7, which arrangement provides for improved application of the thrust forces provided by the motors."[239]

Plaintiffs contend "between" refers to the area or space separating two objects and that space extends above and below the two objects.[240] They maintain common usage is consistent with that understanding, providing as an example the steps of a stairway being between the handrails, even though the handrails are well above the

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[236] *Id.* at 13 (quoting D.I. 340, Ex. FF (Webster's Third New International Dictionary, 2002) at 209).
[237] *Id.* (quoting '125 patent, 4:61-69).
[238] *Id.*
[239] *Id.*, Ex. T (Amendment) at 7.
[240] D.I. 360 at 4.

steps.[241]

The court agrees with plaintiffs that a question of fact exists as to whether the accused rides in this category have magnet assemblies that literally meet the requirement of being mounted "between said tracks." Plaintiffs provide examples where the common understanding of "between" could support their position, and cite the Federal Circuit as also agreeing the preposition "between" could describe something extending beyond the bounds of the objects of that preposition.

Also, unasserted claim 1 recites "linear induction motors mounted between said rails in an opposed configuration, said motors being on about the same level above said rail bottomplates as said horizontal travel wheel and portions of said vertical travel wheels above the axes thereof when said car passes over said motors . . . ."[242] Unasserted claim 2 similarly recites:

> opposed linear motors mounted between said tracks . . . and said motors being disposed between said wheels when said car passes over said motors, said mo[t]ors being disposed at a level above bottom plates of said track rails and generally equal to the level of portions of said wheels above said bottom plates and above the axes of said wheels when said car passes over said motors . . . .[243]

Thus, claim 1 and 2 specify that motors are mounted between the rails/tracks, and also specify the relative level at which the motors are mounted. Claim 3 specifies the "magnet assemblies" are to be mounted "between said tracks," but does not specify

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[241] *Id.* Another example suggested was that something can be between two lines even though a line has no height at all, e.g., a football can be between the thirty and forty-yard lines. *Id.* at 4-5. Plaintiffs also note the Federal Circuit's agreement with the proposition that "the preposition 'between' could be used to describe something that extends beyond the bounds of the objects of the preposition." *Outside Box Innovations, LLC v. Travel Caddy, Inc.*, 260 Fed. Appx. 316, 319 (Fed. Cir. 2008).

[242] '125 patent, claim 1.

[243] '125 patent, claim 2.

anything concerning the relative level at which they are mounted. The court does not agree that the specificity set forth as to the level of the motors mounted between the rail/tracks of claims 1 and 2 is required by the magnet assemblies recited in claim 3.

Furthermore, the specification language cited by defendants describes Figure 1 which illustrates motors, not the magnet assemblies. Even if, as defendants argue, the motors and the magnetic braking assemblies necessarily are at the same level because each acts on the metal fin (alternatively providing propulsion and deceleration), description of that particular embodiment does not require limiting claim 3 to that embodiment. Finally, the prosecution history cited in defendants' opening brief discusses the amendment of application claim 7 and distinguishes that claim from the referenced prior art. That claim issued as claim 1 which, as noted above, specifies the relative levels of the motors recited in that claim. Amendment of issued claim 1 does not support defendants' position as to claim 3. Therefore, the court denies defendants' motion for summary judgment of non-infringement as to the accused rides having magnet assemblies "between" the rails but also at a level above or below the rails.[244]

Finally, defendants argue the accused rides in the third overarching category, i.e., rides with brake systems that do not include a fin and/or magnet assemblies, do not infringe because they lack the claimed "metal fin extending from an underside of said car," or "opposed magnet assemblies mounted between said tracks."[245]

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[244] Defendants state the accused Xcelerator ride is alleged to literally infringe, but actually has the "reverse" arrangement where the magnet assemblies are located on the car and the metal fins are located on the track. D.I. 340 at 7 n.4 (citing *id.*, Ex. D at 40). In that case, this ride could only infringe under the doctrine of equivalents. Because plaintiffs cannot establish infringement under the doctrine of equivalents, the court grants defendants' motion for summary judgment of non-infringement of the accused Xcelerator ride on that basis.

[245] *Id.* at 15.

Defendants argue the V2 and Vertical Velocity rides lack the claimed opposed magnet assemblies and metal fin.[246] Defendant Six Flags' Rule 30(b)(6) representative, Larry Chickola, explained "[t]he Vertical Velocity ride is a linear synchronous motor launch coaster, and linear synchronous motors are used as magnetic braking devices as well as launching devices."[247] In response to being asked whether Vertical Velocity "has a metal fin . . . that works with the permanent magnets," Chickola responded, "[n]ot exactly. As a launch coaster, a linear motor that's center [sic] equivalent of the fin is part of the motor arrangement, and it has some sort of electric current flowing through it that causes the propulsion. So it's not just a piece of metal fin."[248]

Plaintiffs argue defendants' interrogatory responses, deposition testimony, and documents produced by defendants demonstrate genuine issues of material fact preclude summary of non-infringement for any of these rides.

Plaintiffs' Interrogatory 15 sought identification of any "Magnetic Brake Ride," defined, in part, to mean any ride "which utilizes magnetic force or eddy currents from permanent magnets as a means of braking or decelerating the car (or the other wheeled element)."[249] Defendants' response identified two Vertical Velocity rides as having magnetic brakes provided by Intrasys.[250] Plaintiffs also note Chickola testified

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[246] *Id.*

[247] *Id.*, Ex. N (Chickola Dep., Oct. 7, 2011) at 50:23-51:2.

[248] *Id.*, Ex. N at 52:13-19.

[249] D.I. 360, Ex. 21 (Plaintiffs' First Set of Requests for Production of Documents and Things (Nos. 1-89)) at 8; *id.*, Ex. 22 (Plaintiffs' Second Set of Interrogatories (Nos. 15-23)) at 1(adopting the definitions set forth in exhibit 21), and at 2 (Interrogatory 15 ("For each Magnetic Brake Ride, identify the ride company that supplied the ride, the total contract cost for purchase and installation of the ride, and identify any other company that supplied the magnetic brake components for the ride.")).

[250] *Id.*, Ex. 23 (Defendants' Responses to Plaintiffs' Second Set of Interrogatories (Nos. 15-23) at 5 and Ex. A).

Vertical Velocity "does have permanent magnets."[251] Additionally, plaintiffs point to documents identified by defendants for the V2 and Vertical Velocity rides indicating those rides use "Eddy Current Brakes" with "magnetic yokes" and "reaction fins."[252] They argue a parts list on a drawing, "Assembly Double Magnetic Brake," shows magnets (30) on both sides of fins.[253] Another manual states "EDDY Current Brakes are equipped with very strong Permanent Magnets."[254] The final manual cited by plaintiffs recites: "[t]he additional eddy-current brakes in the horizontal section of the track will decelerate the train entering the load/unload area to a complete stop at the final load/unload position."[255]

Plaintiffs point to defendants' expert Kirtley's opening expert report explaining eddy current brakes as operating by relative motion, and that a current is induced in the fin when it passes through the gap as supportive of their contention that, although a fin might also be used for propulsion, it is merely an extra element which does not preclude infringement.[256]

The court determines the evidence cited by plaintiffs raises a question of fact as to whether the V2 and Vertical Velocity rides have a opposed magnet assemblies and a metal fin. Defendants note, however, the linear synchronous motor in these rides is

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[251] D.I. 360 at 11; D.I. 340, Ex. P at 51:3-5 ("Q. So does Vertical Velocity use magnetic brakes that have permanent magnets? A. Yes, it does have permanent magnets.").

[252] D.I. 360 at 11 (citing *id.*, Ex. 28 (partial manual) at SF35567; *id.*, Ex. 29 (partial manual) at SF35647).

[253] *Id.* at 11 (citing *id.*, Ex. 30 at SF35573).

[254] *Id.* at 12 (citing *id.*, Ex. 31 at SF35704).

[255] *Id.* (citing *id.*, Ex. 32 at SF35802).

[256] *Id.* (citing *id.*, Ex. 7 (Opening Report of James L. Kirtley, Jr.) at ¶¶ 26-27).

mounted to the track structure, not the cars.[257] Consequently if the motor is considered to be a "fin," these rides could not infringe for the same reasons discussed, above, with respect to the other accused rides having the "reverse" arrangement of magnet assemblies and fins to the arrangement set forth in the asserted claim. Therefore, the court grants defendants' motion for summary judgment of non-infringement for these two rides.

Defendants contend the Poltergeist ride cannot literally infringe claim 3 of the '125 patent because it does not use magnetic brakes at all, rather, it uses traditional friction brakes.[258] As support for this contention, defendants cite Kirtley's statement in his rebuttal report that he understood the Poltergeist ride does not have magnetic brakes and, therefore, it cannot infringe claim 3.[259] This understanding, however, was from a conversation he had with Chickola; no other support was provided.[260]

Plaintiffs counter that a drawing produced by defendants shows a magnetic brake on the Poltergeist ride.[261] That drawing refers to a "Magnetic Brake Fin (On Train)" and a "Magnetic Brake (On track)."[262] The drawing is titled "LIM Coaster Train," but defendants do not dispute plaintiffs' assertion that it represents the Poltergeist ride, nor is the drawing specifically addressed in their reply brief. The court determines, therefore, a genuine issue of material fact exists as to whether the Poltergeist ride has

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[257] D.I. 340 at 16 n.5 (citing *id.*, Ex. N at 52:6-12 ("Q. Do the cars on Vertical Velocity have a metal fin that works with the brake? A. I believe that there are *permanent magnets on the vehicle*. Q. So the cars for Vertical Velocity have permanent magnets mounted to them? A. Yes.") (emphasis added)).

[258] *Id.* at 7.

[259] *Id.*, Ex. D (Rebuttal Expert Report of James L. Kirtley, Jr.) at 61, ¶ 198.

[260] *See id.*, Ex. D at 61, ¶ 198.

[261] D.I. 360 at 12.

[262] *id.*, Ex. 33 at SF35297.

magnetic brakes or a metal fin, and denies defendants' motion as to that ride.

VI. VALIDITY OF THE '237 PATENT

Plaintiffs accuse the following rides of infringing claims 1 and 10 of the '237 patent: Six Flags' American Thunder, Apocalypse, Dark Knight, El Toro, Green Lantern, New Texas Giant, as well as, Cedar Fair's Spinning Dragon and Prowler.[263] Defendants argue those claims are invalid for failure to satisfy the written description requirement of 35 U.S.C. § 112, ¶ 1 and as obvious under 35 U.S.C. § 103.[264]

Claim 1 of the '237 patent recites:

> 1. An eddy current brake comprising:
>
> a diamagnetic or non-magnetic member;
>
> a first support wall;
>
> a separate second support wall disposed in a spaced apart relationship with said first support wall for enabling the member to pass therebetween;
>
> a first linear array of permanent magnets disposed on the first wall on a side of the first wall facing the second wall;
>
> a second linear array of permanent magnets disposed on the second wall on a side of the second wall facing the first wall, the first and second arrays being parallel with one another; and
>
> apparatus for adjusting eddy current induced in the member, and braking force, as a function of velocity of the member between the arrays, said apparatus including linkages for enabling movement of the member therepast to change the spaced apart relationship between the first and second walls.[265]

Claim 10 of the '237 patent recites:

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[263] D.I. 365 at 2-3.
[264] D.I. 334 at 1-2.
[265] '237 patent, claim 1.

10. An eddy current brake comprising:

a diamagnetic or non-magnetic member;

a first linear array of permanent magnets;

a second linear array of permanent magnets disposed in a spaced apart relationship with said first linear array for enabling the member to pass therebetween, the first and second arrays being parallel with one another; and

apparatus for adjusting eddy current induced in the member, and braking force, as a function of velocity of the member between the arrays, said apparatus including linkages for enabling movement of the member therepast to change the spaced apart relationship between the first and second arrays.[266]

Thus, claim 10 has the same substantive elements as claim 1 with the exception of the language related to the "first support wall" and the "second support wall."

Defendants maintain summary judgment of invalidity of the '237 patent should be granted because, as the claims have been construed, the patent fails to meet the written description requirements of 35 U.S.C. § 112, ¶ 1.[267] That paragraph of section 112 provides:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.[268]

The written description "must 'clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.'"[269] "[T]he test for sufficiency is

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[266] '237 patent, claim 10.
[267] D.I. 334 at 1.
[268] 35 U.S.C. 112, ¶ 1.
[269] *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (alteration in original) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991)).

whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date."[270] Possession means "'possession as shown in the disclosure'" and "requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed."[271] "Compliance with the written description requirement is a question of fact but is amenable to summary judgment in cases where no reasonable fact finder could return a verdict for the non-moving party."[272]

Defendants contend the braking force in the accused rides is adjusted by holding one magnet array stationary and moving the other laterally in order to change the relationship between the magnetic poles of the respective arrays.[273] They argue if the claims are read to cover the accused product, the patent is invalid because the written description is limited to adjusting the braking force by either (a) moving the magnetic arrays towards or away from each other, changing the braking force by changing the distance, the "air gap," between the magnets, or (b) moving both arrays up and down relative to the fin, changing the braking force by changing the degree of penetration of the fin into the magnetic field.[274]

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[270] *Ariad*, 598 at 1351 (citing *Vas-Cath Inc.*, 935 F.2d at 1563).
[271] *Ariad*, 598 at 1351.
[272] *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1307 (Fed. Cir. 2008) (citing *Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1072-73 (Fed. Cir. 2005)).
[273] D.I. 334 at 1.
[274] *Id.* at 1-2.

The court construed the term "change the spaced apart relationship" in the asserted claims to mean "change the relationship of one thing (i.e., a wall or magnet array) relative to the other (i.e., the other wall or magnet array), or both relative to each other, in any direction, in physical space."[275] That construction was suggested by plaintiffs while defendants proposed defining the term more narrowly to mean "the distance between the planes of the two walls containing the magnetic arrays is changed; that is, the width of the air gap between the two magnetic arrays through which the fin passes either increases or decreases."[276] Defendants contend the broad construction plaintiffs successfully argued for is not supported by the specification. They maintain there is no disclosure of adjusting the braking force by holding one magnet array stationary and moving the other laterally in order to change the relationship between the magnetic poles of the respective arrays as the brakes of the accused rides operate.

The court determines defendants have not established by clear and convincing evidence that they are entitled to summary judgment of invalidity for lack of adequate written description. The Abstract recites:

> An eddy current brake includes a diamagnetic member, a first support wall and a second support wall with the first and second linear arrays of permanent magnets disposed on the walls facing one another. Apparatus is provided for *moving at least one* of the walls in order to control eddy current induced in the member in the passage of the member therepast to adjust the braking force between the magnets and the member.[277]

As the court's claim construction order noted "'[m]oving at least one' indicates a move

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[275] D.I. 245 at 15.
[276] *Id.* at 12.
[277] '237 patent, Abstract (emphasis added).

of one or both of the arrays of magnets."[278]

Also, during prosecution of the '237 patent, application claim 2 required moving at least one of the two magnet bearing walls "in a direction perpendicular to the member," and application claim 3 required movement "parallel to the member."[279] As the court's claim construction ruling pointed out, the examiner's basis for rejecting those claims was not the perpendicular or parallel movement cited in the claims, but that the claims "did not exclude the possibility of both walls moving together in an identical manner, which would not have changed the spaced apart relationship between the two walls."[280]

The specification also describes two walls, 104 and 106, with "a spaced apart relationship enabl[ing] the member 102 to pass between the walls, 104, 106 . . . ."[281] Figures 9 and 10 illustrate only one of the walls, 104, and the specification discusses the movement of that wall, whereas wall 106 is not shown, and not described as also moving.[282]

In light of the foregoing, the court denies defendants' motion for summary judgment of invalidity based on a lack of adequate written description.[283]

Defendants also contend the asserted claims are invalid as obvious under 35

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[278] D.I. 245 at 13.
[279] D.I. 365 at 12.
[280] D.I. 245 at 14.
[281] '237 patent, 3:65-4:9.
[282] '237 patent, 5:35-67.
[283] Defendants also argue "[t]o the extent plaintiffs' claims are found to cover systems, like the accused products, . . . that control braking force by turning the brakes on and off only, they are unsupported by the written description, and are, therefore, invalid." D.I. 334 at 15. Because, for the reasons set forth below, the court finds the accused rides do not infringe claims 1 and 10 of the '237 patent, it is unnecessary to address defendants' invalidity argument concerning written description of controlling braking force by turning the brakes on and off only.

U.S. C. § 103. Defendants state the only element of claims 1 and 10 that is not taught by the prior art is the use of "linkages" to allow the magnets to move. Defendants contend "linkages" were commonly known to one of ordinary skill in the art, and the linkages in the '237 patent are nothing more than prior art structures, employed in a conventional manner to accomplish the expected result.[284] Defendants maintain plaintiffs' validity expert did not render an opinion as to whether at least three prior art references render the asserted claims obvious.[285] Those references are: German Patent Application 29 24 225 ("Bauer"), U.S. Patent No. 6,062,350 ("Spieldiener"), and U.S. Patent No. 3,352,397 ("Becker").[286]

Bauer, dated June 15, 1979, is titled "Arrangement for contactless electrical eddy current braking of rail vehicles with linear motor drive."[287] Bauer states:

> It is the object of the invention to provide controllability of permanent magnet-excited eddy current brakes so that they can be used as a service and emergency brake on linear motor driven rail vehicles. This object is achieved in that permanent magnets are arranged on the vehicle on both sides of the primary part and that their magnetic poles are movable relative to one another. The braking force is then created by eddy currents in the secondary part under the influence of the permanent magnet combination located on the moving vehicle and adjustable in the effective flux.[288]

Defendants' expert, Kirtley, provides claim charts identifying the disclosure in Bauer of the corresponding elements of claims 1 and 10 of the '237 patent in his opening expert report.[289] Referring to Figs. 2a and 2b, he explains Bauer "describes a

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[284] D.I. 334 at 2.
[285] *Id.*
[286] *Id.* at 6-9.
[287] *Id.*, Ex. TT (Bauer).
[288] *Id.*, Ex. TT at 1. Citations are made to the page numbers of the certified English translation of Bauer.
[289] *Id.*, Ex. C (Opening Expert Report of James L. Kirtley, Jr.) at ¶¶ 144, 164.

way of adjusting retarding force by mounting multipolar arrays of magnets on rotatable disks and allowing for relative rotation so that, in one position, the magnets reinforce and in another they oppose."[290] Bauer "also describes achieving the same effect by shifting the magnets relative to each other in the direction of travel, as shown in Figs. 5a and 5b."[291] Kirtley opines Bauer shows all the limitations of claims 1 and 10 of the '237 patent except for the use of linkages but that "it would have been obvious to use mechanical linkages . . . to achieve the rotation or translation described in Bauer."[292] Kirtley explains this use would have been obvious as use of mechanical linkages is "one of a handful of possible choices that would have been apparent to one of skill in the art . . . ."[293]

Plaintiffs' expert, Thompson, only opines "[t]here is no discussion of linkages or any other mechanism to adjust the braking force as a function of velocity" with respect to the Bauer reference.[294] At deposition, he confirmed that was the only point on which he distinguished Bauer:

> Q. Well, what is inclu–and I'm trying–the only thing I'm seeing included in your expert report is a statement that there is no discussion of linkages or any other mechanism to adjust the braking force as a function of velocity, and I want to know if that's the entirety of it or what else there is, and if so, where it is in this report.
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> A. I think that's all I said about Bauer for claim 1 and–and claim 10.[295]

Thompson testified that his report did not specifically respond to Kirtley's

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[290] *Id.*, Ex. C at ¶¶ 145, 165.
[291] *Id.*, Ex. C at ¶¶ 145, 165.
[292] *Id.*, Ex. C at ¶¶ 146, 166.
[293] *Id.*, Ex. C at ¶¶ 146, 166.
[294] *Id.*, Ex. G (Expert Report of Dr. Marc Thompson) at 16.
[295] *Id.*, Ex. Q (Thompson Dep., Aug. 8, 2012) at 230:12-21.

obviousness opinion:

> Q. Right. And then any discussion of what would or would not be–so–so the–let's assume that that's true, that there is no discussion of linkages or other mechanisms. Do you express any opinion in this report about whether it would be obvious to do based on Bauer?
>
> [objection]
>
> A. I don't say the words "obvious." I just say there is no discussion of linkages or other mechanisms.[296]

Thompson also testified that one of ordinary skill in the art would have been able to utilize linkages:

> Q. [D]o you have an opinion as to whether a person of ordinary skill in the art could design mechanical mechanisms to achieve the motion of the magnetic brakes described in Bauer?
>
> [objection]
>
> A. Do I have an opinion? Yes, the motion–you can design linkages.[297]

However, when asked whether use of linkages would be "the most straightforward" way to achieve that motion, Thompson stated "I can't say whether it would be the most straightforward without further study."[298] He also testified Bauer describes "no mechanism or linkages to adjust the braking force *as a function of velocity*" between the magnets.[299]

Plaintiffs further argue Bauer requires use of "soft iron magnetic yoke[s]" and cites its description of Figure 1 stating "the magnetic lines of force 5, in connection with magnetic yokes 2, close by passing through the secondary part at least twice."[300]

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[296] *Id.*, Ex. Q at 259:20-260:7.
[297] *Id.*, Ex. Q at 233:18-234:2.
[298] *Id.*, Ex. Q at 234:13-18.
[299] *Id.*, Ex. Q at 232:22-24 (emphasis added).
[300] D.I. 365 at 15 (quoting D.I. 334, Ex. TT at 5).

Plaintiffs contrast Bauer with the '237 patent which they contend expressly rejects the use of magnetic yokes: "[n]o magnetic connection, such as a yoke, is required between the walls or the arrays of permanent magnets. This feature enables adjustability of the distance between the member and the magnet arrays."[301] Plaintiffs contend, therefore, Bauer's use of magnetic yokes would lead a person of ordinary skill away from, rather than toward, the inventions of the '237 patent.[302]

The court determines defendants have not shown by clear and convincing evidence that Bauer renders the '237 patent invalid due to obviousness. Plaintiffs' expert opines Bauer describes "no mechanism or linkages to adjust the braking force *as a function of velocity*" between the magnets. Although defendants contend Kirtley did not discuss that language because plaintiffs' purportedly disregard it in their infringement case, there is nevertheless a question of fact as to whether Bauer discloses that requirement. Furthermore, there is a question of fact as to whether it would have been obvious to one of skill in the art to use linkages to achieve the rotation or translation described in Bauer. Kirtley opines use of linkages would be one of a "handful" of options available, suggesting options other than linkages might have been an obvious change to the invention described in Bauer. Also, Thompson did not concede that the use of linkages would have been the most "straightforward" change to make. Finally, defendants contend the '237 patent does not expressly reject the use of yokes, it merely states yokes are not "required" and that Bauer discloses other, movable, embodiments. The court determines, however, there is a question of fact as

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[301] *Id.* (quoting '237 patent, 1:38-41).
[302] *Id.*

to whether the statement in the '237 patent that use of yokes are not required, therefore "enabl[ing] adjustability of the distance between the member and the magnet arrays" would lead one of ordinary skill in the art away from Bauer due to the description of the use of yokes therein.

The court, therefore, denies defendants' motion for summary judgment of invalidity due to obviousness in light of Bauer.

Spieldiener issued May 16, 2000 and is titled "Braking System for an Amusement Device."[303] Spieldiener states:

> The invention concerns an amusement device (1) with one or several passenger carriers (2) and a framework (3). It is preferably designed as a dropping framework. To brake down the movable passenger carriers is provided an eddy current brake (4). It is preferably designed as a linear brake. It is so designed that by influence of the different brake factors it develops basically a constant braking effect by compensating the declining drop speed.[304]

Kirtley provides claim charts identifying the disclosure in Spieldiener of the corresponding elements of claims 1 and 10 of the '237 patent.[305] Kirtley states Spieldiener "employs eddy current braking using permanent magnets."[306] He explains Spieldiener describes two ways of varying the braking force.[307] One way is "by varying the effective width of the interferric gap (7) between the magnetic elements (8) and the coating carrier (17), which can be seen in Fig. 5 . . . ."[308] Kirtley states "[c]hanging the distance between the magnets will necessarily change the force exerted on a conductor

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[303] D.I. 334, Ex. UU (Spieldiener).
[304] *Id.*, Ex. UU, Abstract.
[305] *Id.*, Ex. C at ¶¶ 147, 167.
[306] *Id.*, Ex. C at ¶¶ 148, 168.
[307] *Id.*, Ex. C at ¶¶ 150, 169.
[308] *Id.*, Ex. C at ¶¶ 150, 169 (citing D.I. 334, Ex. UU at 6:20-22).

passing between them."[309] "The second method of adjusting the braking effect is illustrated in Figure[s] 9, 10, and 11, and consists of varying the overlap between the magnets and the conductive rail."[310] Kirtley states, "the greater the degree of overlap, the greater the amount of force applied to the rail, and vice versa."[311] According to Kirtley, "Spieldiener . . . teaches all of the limitations of [the asserted claims] of the '237 patent, except that it does not describe the use of 'linkages' to vary the distance between the magnets."[312] He notes this reference "does, however, describe the use of linkages–connecting rods (29) and bearings (30) shown in Figs[.] 10 and 11–to vary the overlap of the magnets and the rail."[313] In light of that description, Kirtley states "I believe it would have been obvious to one of skill in the art at the time of the invention to use that same mechanism to vary the spaced apart relationship in order to vary the braking force for the reasons such functionality was indicated to be desirable in the Spieldiener system."[314]

Thompson states, regarding Figure 5 of Spieldiener, the specification describes the magnet arrays with "'two magnetic carriers (12) that are always designed as a yoke.'"[315] He explains "[i]n the context of the Spieldiener patent, a 'yoke' is a

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[309] *Id.*, Ex. C at ¶ 150.

[310] *Id.*, Ex. C at ¶¶ 151, 169; *id.*, Ex. UU at 6:8-19 ("According to alternative embodiment illustrated in FIGS. 9 to 11 . . . , the energizing and/or conducting parts (5, 6) can also be provided in a movable arrangement. For braking, the energizing parts (5) that, for example, are placed at the passenger carrier (2), can be pushed forward by a suitable actuator and can be brought to an overlapping with the conducting parts (6). In home position or to release the eddy current brake (4), for example to pull-up the passenger carrier (2), the energizing parts (5) can be pulled-back and can be taken out of contact. A pull-back spring or something like that can serve as a failure safety device.").

[311] *Id.*, Ex. C at ¶ 151.

[312] *Id.*, Ex. C at ¶¶ 152, 170.

[313] *Id.*, Ex. C at ¶¶ 152, 170.

[314] *Id.*, Ex. C at ¶¶ 152, 170.

[315] *Id.*, Ex. G at 17 (quoting, D.I. 334, Ex. UU at 3:65).

mechanical structure which maintains a constant spacing between the two opposing magnet arrays."[316] As a result, "the magnet spacing is not movable and hence non-adjustable."[317] With regard to an alternate way to vary the braking force, depicted in Figures 10 and 11, Thompson states those "magnet arrays are not moved in relation to each other. Instead, the overlap of the fin with the magnet arrays can be changed to vary the braking force. In this case, the 'energizing parts (5)' are '. . . pushed forward by a suitable actuator.'"[318] Finally, Thompson notes "in the patent prosecution, the examiner cited Spieldiener as prior art and the examiner allowed issuance of the patent in light of Spieldiener."[319]

Plaintiffs argue, therefore, Spieldiener does not disclose movement of one array with respect to another, as required by the asserted claims. They repeat their contention that the statement in the '237 patent that yokes are not required would lead one of ordinary skill in the art away from Spieldiener which describes certain embodiments "that are always designed as a yoke." They also contend Spieldiener does not disclose any apparatus for adjusting the braking force as a function of the velocity of the member between the arrays.

Defendants make the same arguments against plaintiffs' positions with regard to Spieldiener as they did with regard to Bauer. For similar reasons, the court again finds questions of fact preclude summary judgment of invalidity in light of Spieldiener: whether use of linkages would have been obvious to permit the movement of one array

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[316] *Id.*, Ex. G at 17.
[317] *Id.*, Ex. G at 17.
[318] *Id.*, Ex. G at 17 (quoting D.I. 334, Ex. UU at 6:10-13).
[319] *Id.*, Ex. G at 17.

with respect to another;[320] whether the description of the use of yokes in Spieldiener would lead one of ordinary skill in the art away from that reference; and whether Spieldiener discloses an apparatus for adjusting the braking force "as a function of the velocity of the member between the arrays."[321] Therefore, defendants' motion for summary judgment of invalidity in light of Spieldiener is denied.

Becker issued November 14, 1967 and is titled "Device for Controlling the Speed of Movement of an Object."[322] Becker states: "[t]his invention relates, in general, to roller conveyors and, in particular, to a new and useful braking device for such conveyors."[323]

Kirtley provides claim charts identifying the disclosure in Becker of the corresponding elements of claims 1 and 10 of the '237 patent.[324] He states Becker describes "a device for controlling speed of movement of an object," specifically describing "an overhead trolley mechanism, from which a material handling container would hang by a hook."[325] Kirtley states Fig. 6 "shows a pair of wheels running on a track, with two conductive fins on either side, running between pairs of rows of permanent magnets, the magnets alternating in polarity."[326] Figures 5, 7, and 10 "describe[ ] how to vary the force produced by the eddy current brake by adjusting the

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[320] Kirtley opines "there are only *a limited number* of mechanical approaches for moving the magnet arrays . . . back and forth, and that linkages would have been an obvious choice." D.I. 334, Ex. C at ¶ 170 (emphasis added).

[321] That Spieldiener was considered by the patent examiner, though not dispositive, also adds some weight to plaintiffs' argument that defendants fail to demonstrate, by clear and convincing evidence, that this reference invalidates the '237 patent.

[322] D.I. 334, Ex. SS (Becker).

[323] *Id.*, Ex. SS at 1:12-14.

[324] *Id.*, Ex. C at ¶¶ 161, 175.

[325] *Id.*, Ex. C at ¶ 162, 176.

[326] *Id.*, Ex. C at ¶¶ 162, 177.

transverse width of the magnets."[327] He asserts it was "well known that the strength of magnetic field between two magnet arrays is dependent on the spacing between those arrays, so it would have been obvious to one of ordinary skill in the art that braking force could have been modified by adjusting that spacing using linkages . . . ."[328] Kirtley again explains adjusting spacing using linkages would have been obvious because that is "one of a handful of possible choices that would have been apparent to one of skill in the art . . . ."[329]

According to Thompson, in Becker "there is no discussion of any airgap adjustment to adjust the braking force. The magnets are mounted to rigid members with a fixed relationship to each other."[330] At deposition, he confirmed that was the only point on which he distinguished Becker:

> Q. And the only opinion you offer about Becker with respect to the '237 patent is that it does not discuss air gap adjustments to adjust braking force, is that right?
>
> A. That's all I say here.[331]

Thompson acknowledged his report did not respond to Kirtley's obviousness opinion:

> Q. Yeah, I'm looking at the statement here, and it says, "Regarding Becker, there is no discussion of air gap," and now I'm saying okay, let's assume that that's true. Is there any opinion expressed in this report about whether it would be obvious to do anything with Becker?
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> A. No, I don't state any opinion.[332]

As with the previous references, the court finds a question of fact exists as to

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[327] *Id.*, Ex. C at ¶¶ 163, 178.
[328] *Id.*, Ex. C at ¶¶ 163, 178.
[329] *Id.*, Ex. C at ¶¶ 163, 178.
[330] *Id.*, Ex. G at 17.
[331] *Id.*, Ex. Q at 256:9-13.
[332] *Id.*, Ex. Q at 258:4-10.

whether use of linkages for adjusting the spaced apart relationship of the arrays would have been obvious. Kirtley's reiteration that, in his opinion, use of linkages was "one of a handful" of options for making that adjustment is insufficient to satisfy defendants' burden proving invalidity.[333] Consequently, defendants' motion for summary judgment of invalidity in light of Becker is denied.

VII. INFRINGEMENT OF THE '237 PATENT

Plaintiffs and defendants each move for summary judgment on the issue of infringement. Plaintiffs contend summary judgment of infringement is warranted as to accused rides American Thunder, Apocalypse, Dark Knight, El Toro, and Prowler because each have all of the elements of asserted claims 1 and 10 of the '237 patent and neither defendants' interrogatory responses nor their expert, Kirtley, offers facts as to why those rides do not infringe.[334] Defendants contend they are entitled to summary judgment of non-infringement because the accused rides do not "adjust[ ] eddy current induced in the member, and braking force, as a function of velocity of the member between the arrays," and/or the accused rides do not "change the spaced apart relationship between" the first and second arrays due to "movement of the member therepast," as required by asserted claims.[335]

Defendants first contend the accused rides do not meet the limitation requiring

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[333] With respect to Kirtley's opinion that use of linkages would have been an obvious solution due to a purportedly limited number of possible solutions for each of the cited references, the court is also unconvinced that opinion is sufficient explanation of why one of ordinary skill in the art would have been motivated to modify those references in that way to achieve the patented invention. The Federal Circuit requires that "some kind of motivation must be shown from some source, so that the jury can understand why a person of ordinary skill would have thought of either combining two or more references or modifying one to achieve the patented [product]." *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1374 (Fed. Cir. 2008) (internal quotation marks omitted).

[334] D.I. 330 at 1.

[335] D.I. 334 at 1.

"an apparatus for adjusting eddy current induced in the member, and braking force, as a function of velocity of the member between the arrays." The court construed "as a function of velocity of the member between the arrays" to mean that "the 'apparatus' in claims 1 and 10 is capable of adjusting eddy current and braking force in a way that depends on velocity of the 'member' between the first and second 'arrays' of magnets."[336] Defendants maintain in none of the accused rides is the braking force adjusted as a function of the velocity of the fin when it is between the arrays.[337] The El Toro, Dark Knight, Green Lantern, and Spinning Dragon rides have a pivoting brake arrangement in which one magnet array is held stationary, while a second magnet array may be moved laterally.[338] Kirtley describes this braking arrangement as follows:

> When the brake is applied, the respective permanent magnet north and south pole are positioned directly opposite each other so that their magnetic fields add, inducing a braking force in a fin passing between them. When the brake is released, the movable bar slides laterally (in the direction opposite of the travel of the fin) such that poles of the same polarity are opposite each other, and the magnetic fields cancel out, resulting in no force induced in the fin.[339]

The Apocalypse, American Thunder, New Texas Giant, and Prowler employ a different type of brake.[340] That brake, however, "operates in essentially the same way, except that it does not include pivoting arms. Instead, the movable side of the brake is adjusted directly by a piston that moves backwards and forwards in the direction of travel."[341] Each types of brakes are capable of being either "on" (i.e., braking) or "off"

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[336] D.I. 245 at 15-16.
[337] D.I. 334 at 10.
[338] *Id.* at 5.
[339] *Id.*, Ex. D at 70.
[340] *Id.* at 6.
[341] *Id.*, Ex. D at 71.

(i.e., not braking) and cannot be adjusted between fully on and fully off.[342] Kirtley explains: "[n]either of these types of movable brakes are 'self-regulating,' as in the '237 patent. Instead, in all cases the speed of the car is measured at some point upstream and then a control system determines whether the brake should be on or off when the car passes th[r]ough."[343]

Defendants argue because the accused rides employ a sensor measuring the speed of the car upstream from the brake to determine whether the brake should be on or off, those rides cannot meet the requirement that the braking force is adjusted "in a way that depends on velocity of the 'member' *between the first and second 'arrays' of magnets*."

Plaintiffs contend that argument is irrelevant because the asserted claims do not require any measurement, or a measurement in any particular location.[344] They also maintain that even if the measurement occurs upstream, the braking force will still be adjusted as a function of the velocity of the member between the arrays regardless of whether there is a change in the velocity changes after that measurement and the time the member passes between the arrays.[345]

It is unclear how the braking force is adjusted "in a way that depends on velocity of the 'member' between the first and second 'arrays' of magnets" if the determination of whether to adjust the braking force is made depending on the velocity of the car

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[342] *Id.* at 5.
[343] *Id.*, Ex. D at 71.
[344] D.I. 365 at 4.
[345] *Id.*

measured at a point before the member is between the arrays of magnets.[346] Moreover, the documents and testimony plaintiffs rely on address how the brakes of the specific rides adjust the braking force, not whether that adjustment is made depending on the velocity of the member between the arrays of magnets.[347]

Because defendants have demonstrated the accused rides fail to meet the requirement of claims 1 and 10 of the '237 patent that the braking force is adjusted "as a function of velocity of the member between the arrays," their motion for summary judgment of non-infringement is granted and plaintiffs' motion for summary judgment of infringement is denied.

The asserted claims also require "linkages for enabling movement of the member therepast to change the spaced apart relationship between the first and second [walls/arrays]." Defendants maintain none of the accused rides "change the spaced apart relationship between" the first and second arrays due to "movement of the member therepast." Defendants reiterate, in the accused rides, a sensor upstream measures the speed of the car, and then a control system determines whether to activate the braking mechanism. Plaintiffs again rely on evidence of how the braking mechanisms of the accused rides apply braking forces, but fail to demonstrate those forces are applied due to the "movement of the member *therepast* to change the spaced apart relationship."

Because defendants have demonstrated the accused rides fail to meet this

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[346] The court notes the construction adopted for "as a function of velocity of the member between the arrays" was the construction plaintiffs urged the court to accept. *See* D.I. 254 at 16.

[347] Again, because the court struck Hanlon's expert report, the court does not consider his opinions contained therein in making its determinations with regard to plaintiffs' and defendants' infringement motions with regard to the '237 patent.

limitation of claims 1 and 10 of the '237 patent, defendants' motion for summary judgment of non-infringement is granted and plaintiffs' motion for summary judgment of infringement is denied.

VIII. RECOMMENDED DISPOSITION

Consistent with the findings above,

IT IS RECOMMENDED THAT:

1. Defendants' Motion for Summary Judgment of Invalidity of the '125 patent (D.I. 337) be GRANTED;
2. Plaintiffs' Motion for Summary Judgment of Infringement of claim 3 of the '125 patent (D.I. 327) be DENIED;
3. Defendants' Motion for Summary Judgment of Non-Infringement of claim 3 of the '125 patent (D.I. 339) be GRANTED as to certain accused rides and DENIED as to other accused rides as identified herein;
4. Defendants' Motion for Summary Judgment of Invalidity and Non-Infringement of the '237 patent (D.I. 333) be DENIED as to invalidity and GRANTED as to Non-Infringement; and
5. Plaintiffs' Motion for Summary Judgment of Infringement of the '237 patent (D.I. 329) be DENIED.

Pursuant to 28 U.S.C. § 636(b)(1)(A) and (B), FED. R. CIV. P. 72(b)(1), and D. DEL. LR 72.1, any objections to the Report and Recommendation shall be filed within fourteen (14) days limited to twenty-five (25) pages after being served with the same. Any response shall be limited to twenty-five (25) pages.

The parties are directed to the Court's Standing Order in Non-Pro Se Matters for

Objections Filed under FED. R. CIV. P. 72 dated October 9, 2013, a copy of which is found on the Court's website (www.ded.uscourts.gov).

Dated: February 7, 2014

/s/ Mary Pat Thynge
UNITED STATES MAGISTRATE JUDGE