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THE GOODYEAR TIRE & RUBBER COMPANY
200 Innovation Way
AKRON, OH 44316-0001

EXAMINER
STABLEY, MICHAEL R

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SEBASTIEN WILLY FONTAINE,
ARMAND RENÉ GABRIEL LECONTE, FREDERIC NGO,
and CLAUDE ERNEST FELIX BOES

Appeal 2019-006767
Application 15/665,532
Technology Center 3600

Before STEFAN STAICOVICI, EDWARD A. BROWN,
and WILLIAM A. CAPP, *Administrative Patent Judges*.

CAPP, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] seeks our review under 35 U.S.C. § 134(a) of the non-final rejection of claims 1–11 under 35 U.S.C. § 112(a) for failure to comply with the enablement requirement. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies The Goodyear Tire & Rubber Company as the applicant and real party in interest. Appeal Br. 3.

THE INVENTION

Appellant's invention relates to motor vehicles. Spec. ¶¶ 1–2.

Claim 1, reproduced below, is illustrative of the subject matter on appeal.

> 1. A support assembly for a vehicle comprising:
>
> at least two spherical tires travelling on a road surface and rotating relative to the road surface and the vehicle; the tires having an outer tread layer comprising a material having a first stiffness when dry and a second stiffness when wet, the first stiffness being greater than the second stiffness; and
>
> a drive system magnetically driving rotation of the tires relative to the drive system itself such that no portion of the drive system physically contacts the tires or the road surface, the drive system magnetically levitates the vehicle a first predetermined distance from the tires, at least one of the spherical tires comprising:
>
> an outer tread layer comprising a filler selected from the group consisting of carbon black and silica and a copolymer, the copolymer comprising: a polymeric backbone chain derived from a monomer comprising at least one conjugated diene monomer and, optionally, at least one vinyl aromatic monomer; and polymeric sidechains bonded to the backbone chain, the sidechains comprising a polymer capable of exhibiting a lower critical solution temperature (LCST) and, optionally, at least one additional diene based elastomer.

OPINION

The Examiner considers Appellant's invention to be non-enabled.

The crux of the Examiner's findings is repeated, *verbatim*, below:

> With only one drawing related to the drive system (Figure 1) not being prior art, and only two paragraphs of the specification ([0081] and [0082]) describing how the drive system works, the level of experimentation required to figure out the invention would be considered undue. Namely, how the drive system magnetically drives the tires without physically contacting the tires and how at least two such spherical tires would be able to safely levitate an entire vehicle without being

> physically connected are not sufficiently described in the specification to be properly enabled. The current application uses reference number 1110 to encompass the entire drive system, without giving much more detail than that in the specification. Applicant's admitted prior art US 9,090,214 to Bernstein, however, uses at least ten reference numbers and approximately 23 paragraphs in the specification to thoroughly describe the drive system operates of a single embodiment (Figure 3). This level of detail provides one having ordinary skill in the art the proper enablement to be able to understand, recreate, and use the drive system. It is unclear how the current invention's drive system is able to levitate within the tire while also being able to magnetically drive it without contact, or how it is able to provide a strong enough levitation force to support a vehicle the size of a car.

Non-Final Act. 2–3.

Appellant's argument in traverse extends from page 4 to page 6 of the Appeal Brief. Appeal Br. 4–6. Approximately one-half of the argument section is devoted to *verbatim* repetition of the Examiner's Final Action. *Id.* at 4–5. The actual argument is less than one page in length. *Id.* at 5–6. The first paragraph of the argument "submits," in conclusory fashion, that the claims are "fully enabled." *Id.* at 5. The second paragraph merely cites to general legal principles in the Manual of Patent Examining Procedure (MPEP). *Id.* at 6. The remainder of Appellant's argument, in its entirety, is reproduced below.

> As shown in Fig. 1, the present invention is directed to a support assembly (1000) for a vehicle (901) comprising at least two spherical tires (1010) travelling on a road surface and rotating relative to the road surface and the vehicle (901); the tires (1010) having an outer tread layer (1030) comprising a material having a first stiffness when dry and a second stiffness when wet, the first stiffness being greater than the second stiffness (Specification, paragraphs 4, 5, and 81); and a drive system (1100) magnetically driving rotation of the tires (1010)

> relative to the drive system (1100) itself such that no portion of the drive system (1100) physically contacts the tires (1010) or the road surface, the drive system (1100) magnetically levitates the vehicle (901) a first predetermined distance from the tires (1010) (Specification, paragraphs 4, 5, and 81).

Id. at 6. The argument section concludes with a single sentence declaring that all eleven pending claims are in condition for allowance. *Id.*

We have reviewed Appellant's disclosure and agree with the Examiner's findings that disclosure of Appellant's magnetic levitation systems is limited to Figure 1 and paragraphs 81 and 82 of the Specification. *See* Spec. ¶¶ 81, 82, Fig. 1. Element 1120, which is the part of the drive system that magnetically levitates vehicle 901 from tires 1010, is depicted in Figure 1 as a black box. *Id.* Fig. 1. The accompanying description in the Specification is limited to the following teaching.

> Another part 1120 of the drive system 1100 may magnetically levitate the vehicle 901 the first predetermined distance from the tires 1010. Either part 1110 or 1120 of the drive system 1100 may be a magnetically passive component that responds to variations of a magnetic field. A corresponding other part 1120 or 1110 of the drive system 1100 may be a magnetically active component that generates variations in the magnetic field. Either component 1110, 1120 may itself generate a constant magnetic field.

Spec. ¶ 81. With respect to the magnetic motive mechanism within tire 1010, the Specification contains, in its entirety, the following description.

> As shown in FIG. 1, a support assembly 1000 for a vehicle 901 in accordance with the present invention may include at least two spherical tires 1010, a drive system 1100 emoting the tires 1010 such that the vehicle 901 may be transported along a road surface. The vehicle 901 may be a car, golf cart, motorcycle, military transport, etc. The drive

> system 110 magnetically levitates the vehicle 901 a first predetermined distance from the tires 1010 and magnetically maintains the drive system 110 at a constant orientation relative to the road surface. A first part 1110 of the drive system 1100 may magnetically levitate itself a second predetermined distance from an inner surface 1020 of the tires 1010 such that the part 1110 is entirely enclosed within an interior space 1025 of each tire 1010. . .
>
> The spherical tires 1010 may include several spherical layers 1030. Some of the layers 1030 may function similarly to layers of a conventional pneumatic tire, such as the tread, the belts, the overlay, the carcass, etc. At least one of the layers 1035 may include a material responsive to a magnetic field variations such that each of the tires 1010 may be controllably rotated about a spherical center 1011 of the tires relative to the vehicle 901, the drive system 1100, and the road surface.

Id. ¶¶ 81–82.

In contrast to the foregoing abbreviated teaching disclosure regarding the magnetic levitation systems of the invention, the Specification devotes copious verbiage to describing a prior art device that is disclosed in Bernstein (US 9,090,214 B2, iss. July 28, 2015), entitled Magnetically Coupled Accessory For a Self-Propelled Device (hereinafter "Bernstein"). *See* Spec. ¶¶ 17, 41–80, Figs. 3–6. Bernstein is assigned to Orbotix, Inc. (now known as Sphero, Inc.). Bernstein discloses a toy robot that is reminiscent of the BB-8 droid that achieved fame in the *Stars Wars* movie franchise.[2]

[2] *https://sphero.com/pages/legacy-products* accessed June 17, 2020; *https://en.wikipedia.org/wiki/Sphero* accessed June 17, 2020; *techcrunch.com/tag/orbotix* accessed June 17, 2020.

The Bernstein device features a small hemispherical device that sits atop a sphere and magnetically levitates above it. *See* Bernstein, col. 2, ll. 23–26. Bernstein's lower spherical housing 302 rotates in a manner that allows the overall device to be self-propelled. *Id.* col. 8, ll. 49–63. Such rotation is achieved via motors 322, 324 that drive wheels 318, 320 in a more-or-less conventional, electro-mechanical manner. *Id.* col. 9, l. 39 – col. 10, l. 36.

Essentially, Appellant is claiming a major leap forward from the teachings of Bernstein's toy robot. The structure that is levitated above the spherical housing or wheel is not merely an external accessory device 330 to a toy that is substantially smaller than an underlying spherical housing or tire, but rather constitutes a "vehicle." Claims App. claim 1. The Specification describes that vehicle 901 may be a car, golf cart, motorcycle, or military transport. Spec. ¶ 81. There is no context in the Specification that would support a conclusion that Appellant is referring to a toy car, a toy motorcycle, or a toy military transport, etc. *See generally* Spec. Furthermore, whereas Bernstein's toy entails a single spherical housing or tire, Appellant's invention contemplates a vehicle with at least 2 spherical tires. *Id.* (motorcycle); Claims App. claim 1 ("at least two spherical tires"). A person of ordinary skill in the art attempting to practice Appellant's invention would reasonably expect to be provided with a teaching regarding how to coordinate the actions and motions of a plurality of spherical tires.

To be enabling, a patent's specification must "teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *ALZA Corp. v. Andrx Pharms., LLC*, 603 F.3d 935, 940 (Fed. Cir. 2010). Factors to be considered in determining

whether a disclosure would require undue experimentation include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). It is not necessary to discuss each Wands factor in an enablement rejection. *In re Hillis*, 484 F.App'x 491 (Fed. Cir. 2012); MPEP § 2164.04. Rather, the rejection should focus on those factors, reasons, and evidence that lead to the conclusion that the specification fails to teach how to make and use the claimed invention without undue experimentation. *Id.*

The Examiner finds, correctly, that Appellant's disclosure provides little in the way of direction or guidance (*Wands* factor 2). Non-Final Act. 3. The Examiner further finds that, at the time of the invention, the state of the art of magnetically levitated vehicles and drive components was not sufficiently developed that Appellant could reasonably have omitted detailed disclosure of such in the Specification (*Wands* factor 5). *Id.*; *see Streck, Inc. v. Research & Diagnostic Sys., Inc.*, 665 F.3d 1269, 1288 (Fed. Cir. 2012) (explaining that a patent need not teach, and preferably omits, what is well known in the art). The Examiner further finds, and Appellant does not dispute, that at the time of the invention, there was no prior art even close to disclosing the concept supporting a vehicle with no physical contact between the drive system, tires, and vehicle (*Wands* factors 6 and 7). *Id.*

The Examiner correctly finds and concludes that Appellant's claims are non-enabled. We sustain the Examiner's Section 112 non-enablement rejection of claims 1–11.

CONCLUSION

Claims Rejected	§	Basis	Affirmed	Reversed
1-11	112	Non-Enablement	1-11	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED