

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF INDIANA**

ALL CELL TECHNOLOGIES, LLC and
ILLINOIS INSTITUTE OF
TECHNOLOGY,

Plaintiff,

v.

WORKHORSE MOTOR WORKS INC.
and WORKHORSE GROUP INC.

Defendants.



Provided by:
[Overhauser Law Offices LLC](http://www.iniplaw.org)
www.iniplaw.org
www.overhauser.com

Civil Action No. 1:19-cv-2975

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs, All Cell Technologies, LLC (“All Cell”) and Illinois Institute of Technology (“IIT”), by and through their counsel, for their complaint against Defendants, Workhorse Motor Works Inc. and Workhorse Group Inc. (collectively “Workhorse”), state as follows:

NATURE OF THE CASE

1. This is an action arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

THE PARTIES

2. All Cell is a limited liability company organized under the laws of the State of Illinois with a place of business at 2321 West 41st Street, Chicago, Illinois 60609. All Cell was incorporated in 2001, and lists Illinois Institute of Technology professors S. Al-Hallaj and J. Selman as the two managers of the company. All Cell is in the business of, among other things, the design, marketing, sale, and support of batteries with advanced cooling systems. All Cell advertises its batteries on the website <http://www.allcelltech.com>.

3. IIT is a corporation organized under the laws of the State of Illinois with a place of business at 10 West 35th Street, Chicago, Illinois 60616. IIT is a prestigious, technology-focused research university offering undergraduate and graduate degrees in, among other things, engineering, science, design, human sciences, and applied technology.

4. All Cell and IIT are hereinafter collectively referred to as “Plaintiffs.”

5. On information and belief, Workhorse Motor Works Inc. (“WMW”) is a corporation organized under the laws of the State of Indiana with a manufacturing plant located at 940 Indiana State Road 32, Union City, Indiana 47390.

6. On information and belief, Workhorse Group Inc. (“WGI”) is a publicly traded corporation organized under the laws of the State of Nevada. According to Workhorse Group Inc.’s website, the “Workhorse Headquarters” are located at 100 Commerce Dr., Loveland, Ohio 45140 and the “Workhorse Factory” is located at 940 State Route 32, Union City, Indiana 47390.

7. On information and belief, Workhorse is in the business of developing and manufacturing electric vehicles and plug-in hybrid vehicles. Workhorse advertises its vehicles on the website <http://www.workhorse.com>.

JURISDICTION AND VENUE

8. This Court has exclusive jurisdiction over the subject matter of this case under 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States.

9. The Court has personal jurisdiction over each of WMW and WGI because each entity has, as discussed in greater detail below, committed acts of patent infringement in this judicial district.

10. WMW is an Indiana corporation; has a regular and established place of business in this judicial district at their manufacturing plant located at 940 Indiana State Road 32, Union City,

Indiana 47390; has registered with the State of Indiana as a domestic corporation operating in the State of Indiana; and has maintained a registered agent for service of process in this judicial district.

11. WGI is a Nevada corporation and has a fixed and ongoing place of business in this judicial district at its manufacturing plant located at 940 Indiana State Road 32, Union City, Indiana 47390. In its 2018 10-K annual report filed with the Securities and Exchange Commission, WGI stated:

Workhorse delivery vans are produced at our Union City, Indiana plant and are in use by our customers on daily routes across the United States. To date, we have built and delivered over 360 electric and range extended medium-duty delivery trucks to our customers.

We intend to produce the W-15 at our existing 250,000 square foot facility in Union City, Indiana. This plant has the capability to produce more than 60,000 vehicles per year.

Our truck assembly facility is located in Union City, Indiana. This facility consists of three buildings with 250,000 square feet of manufacturing and office space on 47 acres.

To date, we are registered as a motor vehicle manufacturer in Indiana and Ohio and as a dealer in California, New York and Chicago.

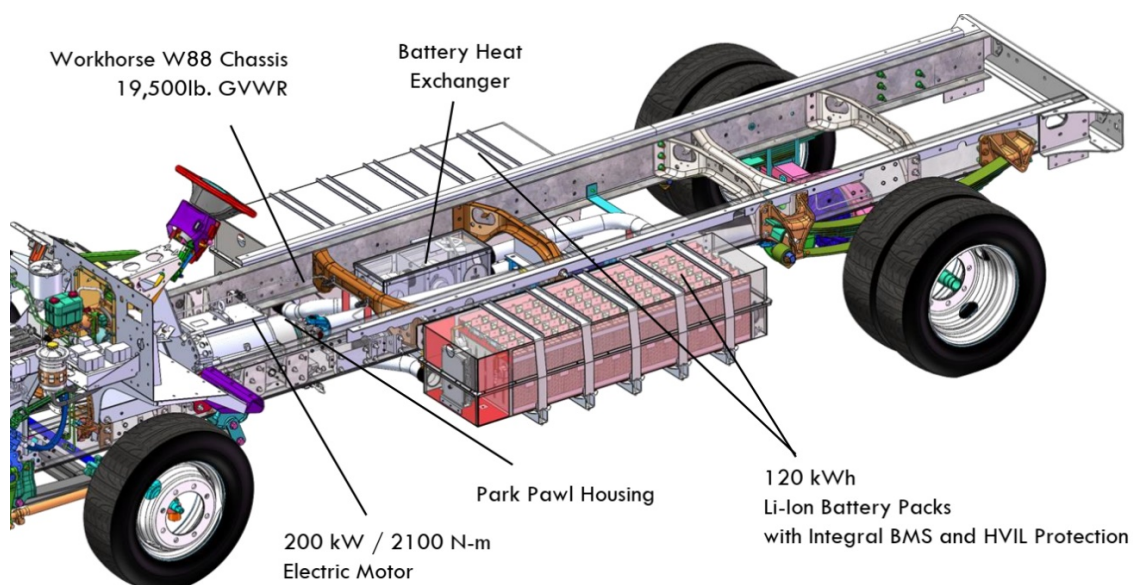
12. Venue is proper in this judicial district under 28 U.S.C. §§ 1391(b)-(c) and 1400(b). *See, e.g., TC Heartland LLC v. Kraft Foods Group Brands LLC*, 137 S. Ct. 1514 (2017) and *In re Cray Inc.*, 871 F.3d 1355 (Fed. Cir. 2017).

BACKGROUND

13. All Cell designs and builds blocks constructed from phase change materials (“PCM”), and these blocks are adapted to house electrochemical cells. During charge and discharge of electrochemical cells heat is produced, and high temperatures produced can adversely

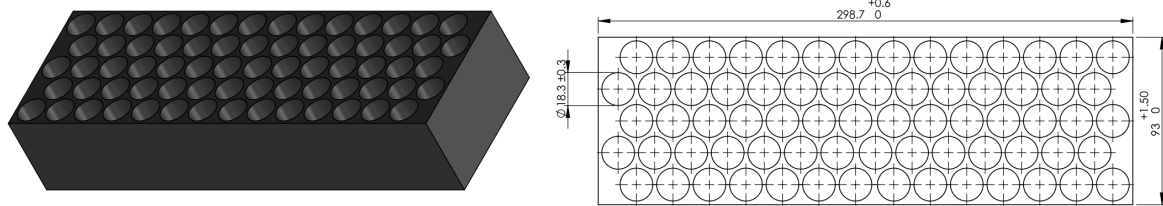
affect the functionality and lifespan of the cells. All Cell's thermal management blocks use PCM to surround each electrochemical cell, absorbing and conducting heat away to dramatically extend the life of the cells and prevent fire or damage to the battery.

14. As shown in a diagram from WGI's August 2016 investor presentation below, Workhorse's vehicles include numerous Lithium-ion electrochemical cells, and Workhorse uses battery management systems ("BMS") and high-voltage interlock loops ("HVIL") to help control the operating parameters for the numerous electrochemical cells in its vehicles.



Workhorse Group Inc. Investor Presentation August 2016

15. All Cell previously provided Workhorse with thermal management blocks for the electrochemical cells in Workhorse's electric vehicles. The All Cell thermal management blocks contained seventy cylindrical spacings, each of which spacings was 18 millimeters in diameter. Panasonic 18650 Li-ion electrochemical cells were embedded into the cylindrical spacings of All Cell's thermal management blocks (shown below with black exterior and empty holes), wrapped in a specialty packaging material, and then welded in parallel with metal busbars on the negative and positive sides.



All Cell 70P PCC 110062 thermal management block



All Cell Thermal Management Blocks with Panasonic 18650 Cells

16. In or about early 2017, Workhorse ceased purchasing electrochemical cells and thermal management blocks from All Cell and began procuring PCM thermal management blocks, such as the ones shown below, from alternate sources.



PCM Thermal Management Block from Third Party Provider

PATENTS-IN-SUIT

17. On October 22, 2002, the United States Patent and Trademark Office (“USPTO”) duly and legally issued U.S. Patent No. 6,468,689 (“the ‘689 patent”) entitled “Thermal Management of Battery Systems.” IIT, the owner of the ‘689 patent, and All Cell, an exclusive licensee of the ‘689 patent, have standing to sue for infringement of the ‘689 patent. A copy of the ‘689 patent is attached as Exhibit A.

18. On September 13, 2005, the USPTO duly and legally issued U.S. Patent No. 6,942,944 (“the ‘944 patent”) entitled “Battery System Thermal Management.” The ‘944 patent is a continuation-in-part of the ‘689 patent. IIT, the owner of the ‘944 patent, and All Cell, an exclusive licensee of the ‘944 patent, have standing to sue for infringement of the ‘944 patent. A copy of the ‘944 patent is attached as Exhibit B.

19. On September 25, 2012, the USPTO duly and legally issued U.S. Patent No. 8,273,474 (“the ‘474 patent”) entitled “Battery System Thermal Management.” The ‘474 patent is a continuation-in-part of U.S. Patent Application No. 11/225,823, a continuation of the ‘944 patent. IIT, the owner of the ‘474 patent, and All Cell, an exclusive licensee of the ‘474 patent, have standing to sue for infringement of the ‘474 patent. A copy of the ‘474 patent is attached as Exhibit C.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 6,468,689

20. Plaintiffs repeat and re-allege the allegations in the preceding paragraphs as though fully set forth herein.

21. Workhorse has infringed and continues to infringe at least method claims 1-6 and 8 of the ‘689 patent within the meaning of 35 U.S.C. § 271(a) by, at least, performing the methods recited in such claims upon the use by Workhorse, its employees, agents, and representatives of

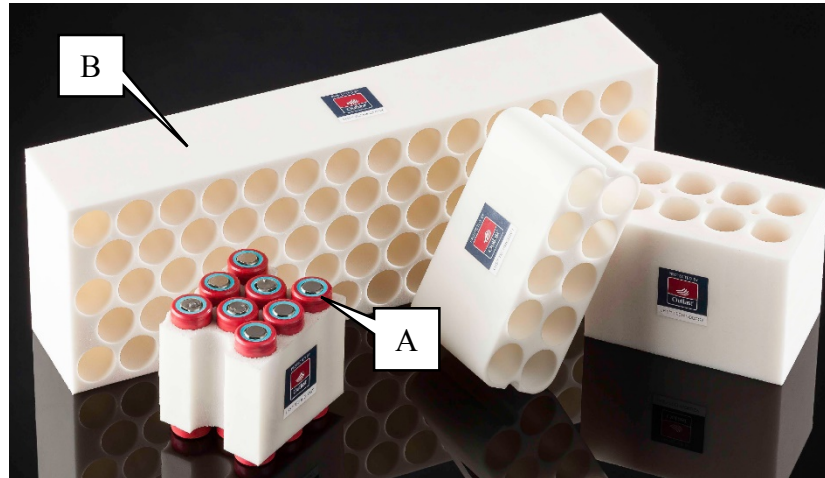
Workhorse of electric vehicles that include PCM thermal management blocks or matrices, including, at least, Workhorse's NGEN-1000 delivery van, W-88 delivery van, W-15 electric pickup truck, SureFly personal helicopter, and HorseFly delivery drone (collectively, the "Accused Products"). The Accused Products contain each and every element of at least claims 1-6 and 8 of the '689 patent both literally and under the doctrine of equivalents in contravention of 35 U.S.C. § 271.

22. Workhorse's infringing uses of the recited methods of at least claims 1-6 and 8 of the '689 patent, as described in paragraph 21 above, have occurred during, at least, Workhorse's demonstration, testing, and/or development of the Accused Products. By way of just one example and not limitation, Workhorse has previously "collaborated on a test run of 450-square-foot electric vans that were used in and around San Francisco. Those trials have helped [Workhorse and the company with which it collaborated, Prefix Corporation,] understand how to reduce the weight of the vehicles to improve mileage, performance, and driver safety while reducing the demand on the charging infrastructure."¹

23. Subject to additional information obtained during discovery, the Court's construction of any patent claim terms about whose meaning the parties disagree, and the detailed infringement contentions Plaintiffs will make pursuant to this district's *Instructions for Preparing Case Management Plan in Patent Cases*, the Accused Products infringe the asserted claims as follows: the Accused Products practice every limitation of claim 1 of the '689 patent – i.e., the electrochemical cells [A] are discharged to power the Workhorse vehicles, and in the process of discharging the cells [A] a quantity of heat is produced. The PCM thermal management block [B] is in thermal contact with the cells [A] and absorbs a portion of the heat produced while the cells

¹ See, e.g., <https://cleantechnica.com/2019/04/12/workhorse-partners-with-prefix-corporation-as-ngen-electric-delivery-van-nears-production/>.

are discharging. Following discharge, such as when the Workhorse vehicle is stopped at a delivery location, the PCM thermal management block [B] releases a portion of the absorbed heat back into the electrochemical cells [A]. When the vehicle moves again, such as when the vehicle heads to the next delivery location in a delivery route, the electrochemical cells [A] are discharged at an elevated temperature to power the vehicle.



24. As discussed above, All Cell and Workhorse had a previous business relationship with respect to technology utilizing the PCM thermal management methods covered by the claims of the '689 patent. As a result of that business relationship, Workhorse had and has direct knowledge of the applicability of the '689 patent to its Accused Products.

25. Notwithstanding its direct knowledge of the applicability of the '689 patent to its Accused Products, Workhorse has indirectly infringed and continues to indirectly infringe at least claims 1-6 and 8 of the '689 patent under 35 U.S.C. § 271(b) by knowingly and actively inducing the infringement of those claims by others. Workhorse has knowingly and actively induced infringement of at least claims 1-6 and 8 of the '689 patent, for example, through the foregoing activities including, without limitation, offering to sell and selling the Accused Products in the United States, and by instructing, aiding, assisting, and encouraging the use of the Accused

Products in a manner that infringes at least claims 1-6 and 8 of the '689 patent. The direct infringers that are being induced by Workhorse include, without limitation, Workhorse's customers that use the Accused Products in the United States.

26. Notwithstanding its direct knowledge of the applicability of the '689 patent to its Accused Products, Workhorse has also indirectly infringed and continues to indirectly infringe at least claims 1-6 and 8 of the '689 patent under 35 U.S.C. § 271(c) by knowingly and actively contributing to the infringement of those claims by others. Workhorse has knowingly and actively contributed to the infringement of at least claims 1-6 and 8 of the '689 patent by others, for example, without limitation, by offering to sell and selling the Accused Products in the United States, and by instructing, aiding, assisting, and encouraging the use of the Accused Products in a manner that infringes at least claims 1-6 and 8 of the '689 patent, where such Accused Products and their components provided by Workhorse constitute a material part of the patented invention of at least claims 1-6 and 8 of the '689 patent, which Workhorse knows is especially made or adapted for use in an infringement of at least claims 1-6 and 8 of the '689 patent, and which is not a staple article of commerce suitable for substantial non-infringing use. The direct infringers with respect to whose infringement Workhorse has contributed under 35 U.S.C. § 271(c) include, without limitation, Workhorse's customers that use the Accused Products in the United States.

27. Workhorse's infringement of, knowing and intentional inducement to infringe, and/or contributory infringement of, the '689 patent has injured Plaintiffs and Plaintiffs are entitled to recover damages adequate to compensate them for such infringement, but in no event less than a reasonable royalty, as permitted under 35 U.S.C. § 284.

28. Workhorse's ongoing infringement of, knowing and intentional inducement to infringe, and/or contributory infringement of, the '689 patent has been willful, deliberate, and objectively reckless.

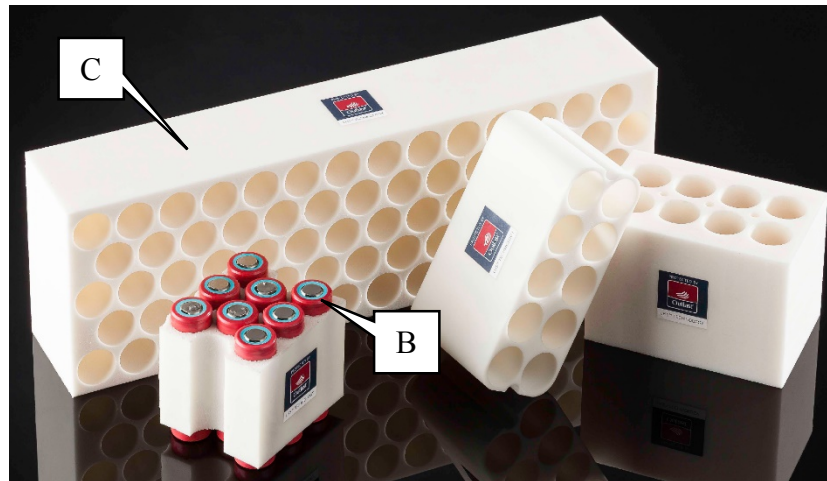
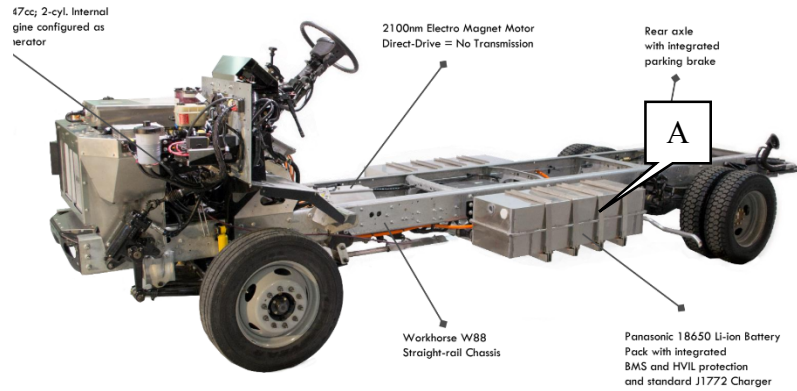
29. Plaintiffs have complied with 35 U.S.C. § 287 to the extent required by law with respect to the '689 patent.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 6,942,944

30. Plaintiffs repeat and re-allege the allegations in the preceding paragraphs as though fully set forth herein.

31. Workhorse has infringed and continues to infringe the '944 patent by, at least, making, using, offering for sale, and selling throughout the United States, including within this judicial district, the Accused Products.

32. By way of example, as shown below, the Accused Products include every limitation of claim 1 of the '944 patent – i.e., the Accused Products include housings [A] and a plurality of Panasonic 18650 Li-ion battery cells [B] within the housing. A PCM block [C] is also contained within the housing and is in thermal contact with the plurality of electrochemical cells [B]. When the electrochemical cells [B] are charged or discharged, a PCM block [C] absorbs a portion of the heat generated by the electrochemical cells [B]. Upon information and belief, the PCM block includes a graphite or similarly thermally conductive lattice that assists in equalizing the temperature across the PCM block. The PCM is disposed within openings of the lattice.



33. Workhorse has infringed and continues to infringe at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent within the meaning of 35 U.S.C. § 271(a) through the foregoing activities including, without limitation, making, using, offering for sale, and selling the Accused Products throughout the United States. The Accused Products contain each and every element of at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent both literally and under the doctrine of equivalents in contravention of 35 U.S.C. § 271.

34. As discussed above, All Cell and Workhorse had a previous business relationship with respect to technology utilizing the battery systems covered by the claims of the '944 patent. As a result of that business relationship, Workhorse had and has direct knowledge of the applicability of the '944 patent to its Accused Products.

35. Notwithstanding its direct knowledge of the applicability of the '944 patent to its Accused Products, Workhorse has indirectly infringed and continues to indirectly infringe at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent under 35 U.S.C. § 271(b) by knowingly and actively inducing infringement of those claims by others. Workhorse has knowingly and actively induced infringement of at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent, for example, through the foregoing activities including, without limitation, offering to sell and selling the Accused Products in the United States, and by instructing, aiding, assisting, and encouraging the offer for sale, sale, and use of the Accused Products in a manner that infringes at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent. The direct infringers that are being induced by Workhorse include, without limitation, Workhorse's customers that use the Accused Products in the United States.

36. Notwithstanding its direct knowledge of the applicability of the '944 patent to its Accused Products, Workhorse has also indirectly infringed and continues to indirectly infringe at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent under 35 U.S.C. § 271(c) by knowingly and actively contributing to the infringement of those claims by others. Workhorse has knowingly and actively contributed to the infringement of at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent by others, for example, without limitation, by offering to sell and selling the Accused Products in the United States and by instructing, aiding, assisting, authorizing, advertising, marketing, promoting, providing for, and/or encouraging the offer for sale, sale, and use of the Accused Products, where such Accused Products and their components provided by Workhorse constitute a material part of the patented invention of at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent, which Workhorse knows is especially made or adapted for use in an infringement of at least claims 1, 2, 15, 16, 21-23, and 26 of the '944 patent, and which is not a staple article of

commerce suitable for substantial non-infringing use. The direct infringers with respect to whose infringement Workhorse has contributed under 35 U.S.C. § 271(c) include, without limitation, Workhorse's customers that use the Accused Products in the United States.

37. Workhorse's infringement of, knowing and intentional inducement to infringe, and/or contributory infringement of, the '944 patent has injured Plaintiffs and Plaintiffs are entitled to recover damages adequate to compensate them for such infringement, but in no event less than a reasonable royalty, as permitted under 35 U.S.C. § 284.

38. Workhorse's ongoing infringement of, knowing and intentional inducement to infringe, and/or contributory infringement of, the '944 patent has been willful, deliberate, and objectively reckless.

39. Plaintiffs have complied with 35 U.S.C. § 287 to the extent required by law with respect to the '944 patent.

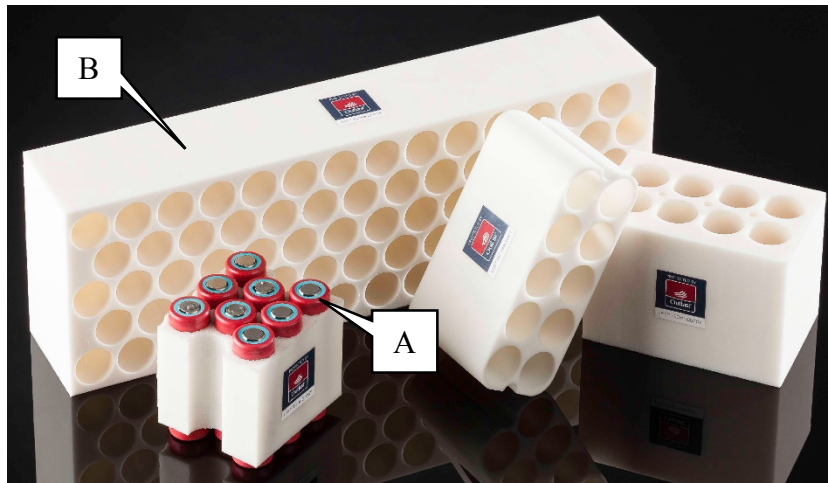
COUNT III – INFRINGEMENT OF U.S. PATENT NO. 8,273,474

40. Plaintiffs repeat and re-allege the allegations in the preceding paragraphs as though fully set forth herein.

41. Workhorse has infringed and continues to infringe the '474 patent by, at least, making, using, offering for sale, and selling throughout the United States, including within this judicial district, the Accused Products.

42. By way of example, as shown below, the Accused Products include every limitation of claim 1 of the '474 patent – i.e., the Accused Products include an electrochemical cell array comprising a plurality of Panasonic 18650 Li-ion electrochemical cells [A] and a thermal management matrix [B] enveloping the electrochemical cell array [A]. The thermal management matrix [B] includes a PCM, and on information and belief, the thermal management matrix includes a graphite or similarly thermally conductive lattice within the matrix [B]. The matrix [B]

dissipates at least a portion of the heat generated by the Panasonic 18650 Li-ion electrochemical cells when they are activated.



43. Workhorse has infringed and continues to infringe at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent within the meaning of 35 U.S.C. § 271(a) through the foregoing activities including, without limitation, making, using, offering for sale, and selling the Accused Products throughout the United States. The Accused Products contain each and every element of at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent both literally and under the doctrine of equivalents in contravention of 35 U.S.C. § 271.

44. As discussed above, All Cell and Workhorse had a previous business relationship with respect to technology utilizing the battery systems covered by the claims of the '474 patent. As a result of that business relationship, Workhorse had and has direct knowledge of the applicability of the '474 patent to its Accused Products.

45. Notwithstanding its direct knowledge of the applicability of the '474 patent to its Accused Products, Workhorse has indirectly infringed and continues to indirectly infringe at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent under 35 U.S.C. § 271(b) by knowingly and actively inducing infringement of those claims by others. Workhorse has knowingly and actively

induced infringement of at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent, for example, through the foregoing activities including, without limitation, offering to sell and selling the Accused Products in the United States, and by instructing, aiding, assisting, and encouraging the offer for sale, sale, and use of the Accused Products in a manner that infringes at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent. The direct infringers that are being induced by Workhorse include, without limitation, Workhorse's customers that use the Accused Products in the United States.

46. Notwithstanding its direct knowledge of the applicability of the '474 patent to its Accused Products, Workhorse has also indirectly infringed and continues to indirectly infringe at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent under 35 U.S.C. § 271(c) by knowingly and actively contributing to the infringement of those claims by others. Workhorse has knowingly and actively contributed to the infringement of at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent by others, for example, without limitation, by offering to sell and selling the Accused Products in the United States and by instructing, aiding, assisting, authorizing, advertising, marketing, promoting, providing for, and/or encouraging the offer for sale, sale, and use of the Accused Products, where such Accused Products and their components provided by Workhorse constitute a material part of the patented invention of at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent, which Workhorse knows is especially made or adapted for use in an infringement of at least claims 1-3, 5, 7, 9-12, and 15-19 of the '474 patent, and which is not a staple article of commerce suitable for substantial non-infringing use. The direct infringers with respect to whose infringement Workhorse has contributed under 35 U.S.C. § 271(c) include, without limitation, Workhorse's customers that use the Accused Products in the United States.

47. Workhorse's infringement of, knowing and intentional inducement to infringe, and/or contributory infringement of, the '474 patent has injured Plaintiffs and Plaintiffs are entitled to recover damages adequate to compensate them for such infringement, but in no event less than a reasonable royalty, as permitted under 35 U.S.C. § 284.

48. Workhorse's ongoing infringement of, knowing and intentional inducement to infringe, and/or contributory infringement of, the '474 patent has been willful, deliberate, and objectively reckless.

49. Plaintiffs have complied with 35 U.S.C. § 287 to the extent required by law with respect to the '474 patent.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs, All Cell and IIT, respectfully ask this Court to enter judgment against Defendants, WMW and WGI, and against each of their subsidiaries, successors, parents, affiliates, officers, directors, agents, servants, employees, and all persons in active concert or participation with WMW and WGI, granting the following relief:

- A. The entry of judgment in favor of Plaintiffs and against WMW and WGI;
- B. An award of damages adequate to compensate Plaintiffs for the infringement that has occurred, and in no event less than a reasonable royalty as permitted by 35 U.S.C. § 284, together with prejudgment interest; and
- C. Such other relief that Plaintiffs are entitled to under law, and any other and further relief that this Court or a jury may deem just and proper.

Jury Demand

Plaintiffs demand a trial by jury on all issues presented in this Complaint.

Respectfully submitted,

Dated: July 18, 2019

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