

RUSS AUGUST & KABAT

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MR Technologies GMBH

**UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA**

MR TECHNOLOGIES GMBH,

Plaintiff,

vs.

TOSHIBA AMERICA ELECTRONIC
COMPONENTS, INC., and
TOSHIBA ELECTRONICS DEVICES
AND STORAGE CORPORATION,

Defendants.

Case No.

**COMPLAINT FOR PATENT
INFRINGEMENT**

JURY TRIAL DEMANDED

RUSS, AUGUST & KABAT

1 This is an action for patent infringement arising under the Patent Laws of the
2 United States of America, 35 U.S.C. § 1 *et seq.*, in which Plaintiff MR Technologies
3 GmbH (“MR Tech”) makes the following allegations against Defendants Toshiba
4 America Electronic Components, Inc. (“Toshiba America”) and Toshiba Electronics
5 Devices and Storage Corporation (“Toshiba Electronics”):

6 **INTRODUCTION**

7 1. This complaint arises from Defendants’ unlawful infringement of
8 Plaintiff’s U.S. Patent Nos. 9,928,864 (“’864 Patent”); 11,138,997 (“’997 Patent”);
9 and 12,020,734 (“’734 Patent”) (collectively, “Asserted Patents”).

10 2. The accused products are perpendicular magnetic recording (PMR)
11 hard disk drives (HDDs) and PMR media made, used, offered for sale, or sold in, or
12 imported into, the United States—whether directly by Defendants or indirectly
13 through Defendants’ OEM customers, distributors, retailers, or other
14 intermediaries—including computer devices (e.g., laptops, desktops, servers, game
15 consoles, and/or storage devices) that contain infringing HDD products.

16 **PARTIES**

17 3. MR Technologies is a privately held company, having its principal
18 place of business at Nibelungengasse 11/4, 1010 Vienna, Austria.

19 4. Defendant Toshiba America Electronic Components, Inc. (“Toshiba
20 America”) is a corporation organized under the laws of California, with its principal
21 place of business at 5231 California Avenue, Suite 210, Irvine, CA 92617.

22 5. Defendant Toshiba Electronics Devices and Storage Corporation
23 (“Toshiba Electronics”) is a corporation organized under the laws of Japan, with its
24 headquarters at 580-1, Horikawa-Cho, Saiwai-Ku, Kawasaki, Kanagawa 212-8520,
25 Japan, and its registered principal office at 1-1, Shibaura 1-Chome, Minato-ku,
26 Tokyo 105-0023, Japan.

27 6. Toshiba America is a wholly-owned subsidiary of Toshiba Electronics.
28

JURISDICTION AND VENUE

7. This action arises under Title 35 of the United States Code. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has personal jurisdiction over Defendants in this action because Defendants have committed acts within this District giving rise to this action and have established minimum contacts with this forum such that the exercise of jurisdiction over Defendants would not offend traditional notions of fair play and substantial justice. Defendants, directly and through subsidiaries or intermediaries, have committed and continue to commit acts of infringement in this District by, among other things, importing, offering to sell, and selling products that infringe the Asserted Patents. Defendants derive substantial revenue from such activities by placing infringing products into the stream of commerce for purchase and use by consumers in this District. *See, e.g.,* <https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html> (“Toshiba Electronic Devices & Storage Corporation and its affiliates (Toshiba) supply a wide range of innovative hard disk drive (HDD) products to meet the varied demands of the diversified storage marketplace. Products include high capacity power-efficient storage for Cloud Data Centers, capacity and performance HDDs for Enterprise IT, client HDDs for PC/Desktop, and specialty drives for Surveillance, NAS systems, set-top box video, gaming and external storage. Toshiba aims to continue to advance HDD technologies and innovation to meet and exceed customer requirements across a broad spectrum of storage market segments.”); <https://storage.toshiba.com/consumer-hdd/internal>; <https://storage.toshiba.com/consumer-hdd/external>; <https://storage.toshiba.com/enterprise-hdd>.

9. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b). Defendant Toshiba America has transacted business in this District and has committed acts of direct and indirect infringement in this District by, among other things, making, using, offering to sell, selling, and importing products that infringe

1 the Asserted Patents. *See, e.g.,* [https://storage.toshiba.com/consumer-hdd/internal](https://storage.toshiba.com/consumer-hdd/internal;);
2 <https://storage.toshiba.com/consumer-hdd/external>.

3 10. Defendant Toshiba Electronics is a foreign corporation such that venue
4 is proper in any judicial district under 28 U.S.C. § 1391(c)(3).

5 **INFRINGEMENT BACKGROUND**

6 11. The Asserted Patents are directed to magnetic recording media used in
7 hard disk drives that transcended prior art attempts to overcome the “super
8 paramagnetic limit” which restricted the amount of data that could be stored in
9 existing media. The patents describe and claim a multilayered nucleation host
10 formed on a hard storage layer. The nucleation host has two or more ferromagnetic
11 layers with increasing anisotropy (the resistance to changes in magnetization away
12 from an easy axis) layer to layer toward the hard storage layer (i.e., the anisotropy
13 of a ferromagnetic layer that is closer to the hard storage layer is higher than the
14 anisotropy of a ferromagnetic layer that is farther away from the hard storage layer).
15 Adjacent ferromagnetic layers are exchange coupled directly or via a thin coupling
16 layer. The nucleation host is also exchange coupled to the hard storage layer, either
17 directly or via a coupling layer.

18 12. Dr. Dieter Suess, the inventor of the Asserted Patents, has been a
19 renowned physicist in micromagnetics since the early 2000s. In the May 2006
20 timeframe, Dr. Suess used his own micromagnetics modeling software (which he
21 developed in connection with earning his Ph.D.) to perform advanced
22 micromagnetic simulations of multilayer magnetic recording structures. This led to
23 his groundbreaking discovery that a multilayer nucleation host with increasing
24 anisotropy toward an underlying hard storage layer can decrease the coercive field
25 (making it easier to write to the hard storage layer) while maintaining
26 thermal stability.

27 13. Having the anisotropy increase toward a hard magnetic storage layer
28 was contrary to convention wisdom at the time. In part, that is because the hard

1 storage layer of the claimed invention is toward the bottom of the stack, near the
 2 substrate, and farthest away from the write head. Because the write field decreases
 3 as the distance from the write head increases, conventional wisdom was to put the
 4 hardest layer with the highest anisotropy closest to the write head. Dr. Suess's
 5 invention shattered the conventional thinking, putting the hard storage layer on the
 6 bottom, farthest from the write head, and interposing a plurality of ferromagnetic
 7 layers between the write head and the hard storage layer with the anisotropy of a
 8 ferromagnetic layer that is closer to the hard storage layer being higher than the
 9 anisotropy of a ferromagnetic layer that is farther away from the hard storage layer.

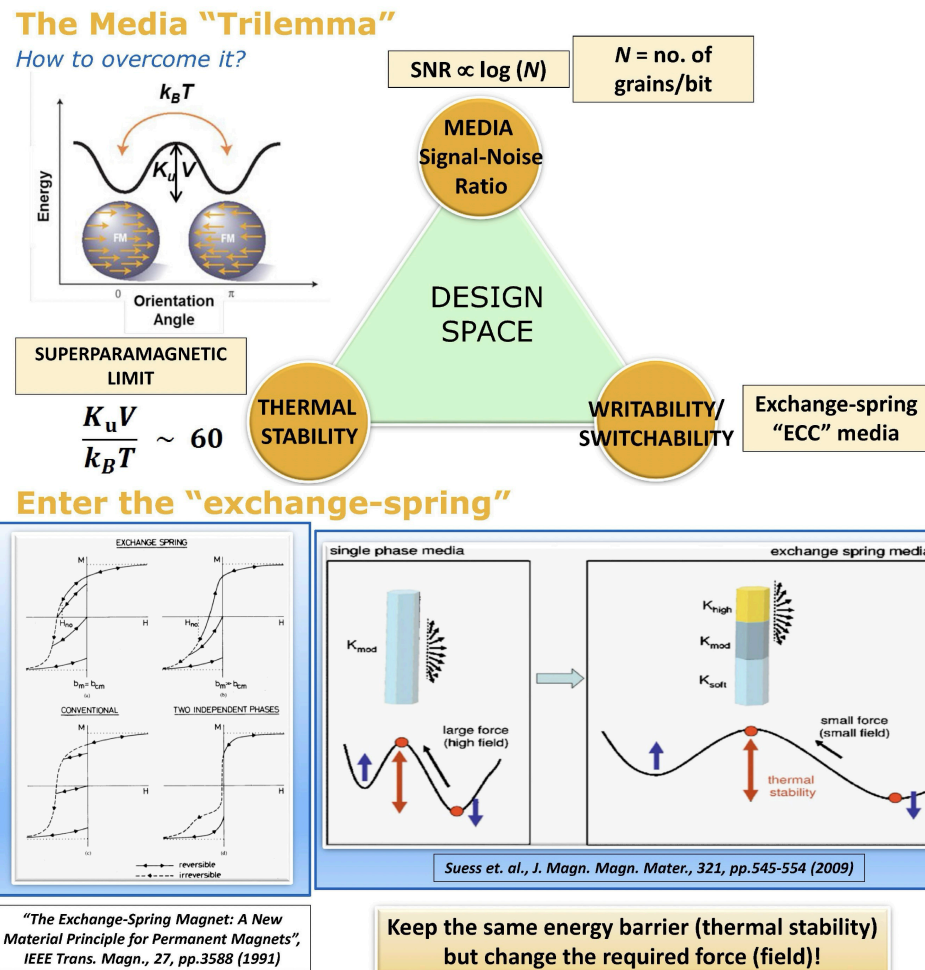
10 14. Dr. Randall Victora—who has worked with and received funding from
 11 HDD market leaders Western Digital and Seagate since at least 2000—has praised
 12 Dr. Suess's invention and related work. In a 2017 letter nominating Dr. Suess for
 13 IEEE Fellow (*"Victoria IEEE Letter"*), Dr. Victora recognized Dr. Suess as the
 14 inventor of the exchange spring media adopted by the HDD industry, and
 15 acknowledged that "almost all state of the art hard disks rely on this idea":

16 The general belief was that a high thermal stability goes along with a
 17 high coercivity. However, the new media demonstrated that the
 18 coercivity can be partially decoupled from thermal stability by the use
 19 of **multiple magnetic layers with graded anisotropy**. The concept of
 20 exchange spring media was patented by D. Suess in 2006. **This new**
 21 **storage media was quickly applied by industry**. Media based on the
 new concept was quickly adopted by industry: nowadays, **almost all**
state of the art hard disks rely on this idea. The work on exchange
 spring media of D. Suess is cited over 800 times.

22 *See MR Techs. GmbH v. Western Digital Techs., Inc.*, No. 8:22-cv-01599 (C.D. Cal.)
 23 (*"MRT-P"*), Dkt. 632 at 112:5-113:8. Dr. Victora's IEEE letter goes on to cite
 24 Dr. Suess's extensively cited article *Multilayer exchange spring media for magnetic*
 25 *recording*, Appl. Phys. Lett. 89, 113105 (2006) and the application that issued as the
 26 '864 Patent. *Id.* 113:16-114:23.

27 15. In an April 2018 IEEE Magnetics Society presentation titled "Recent
 28

developments in magnetic recording media” (“*Srinivasan: Magnetic Recording Media*”), Western Digital’s Director of Materials Engineering Dr. Kumar Srinivasan also credited Dr. Suess’s invention as the solution to the superparamagnetic limit trilemma:



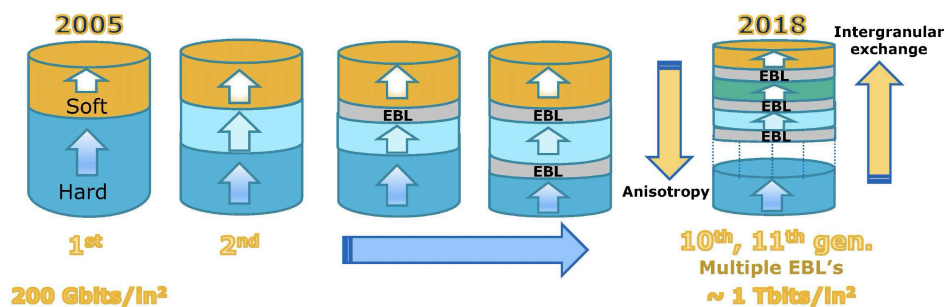
See also <https://scvmag.org/event/recent-developments-in-magnetic-recording-media/> (“Another major breakthrough was the introduction of the exchange-spring (ES) media [which] allowed for improved media writability and switching field distributions, without sacrificing thermal stability [and] helped achieve areal densities of $\sim 1 \text{ Tbit/in}^2$.”).

16. Dr. Srinivasan also showed how Dr. Suess’s invention unlocked the path for increasing areal densities from about 200 Gb/in^2 to upwards of 1 Tb/in^2 —

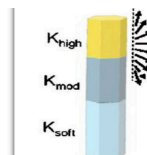
and like Dr. Victora, he acknowledged that Dr. Suess's invention "has *guided most of the advances in PMR media since inception*":

Exchange-coupled composite media

How many EBL's?

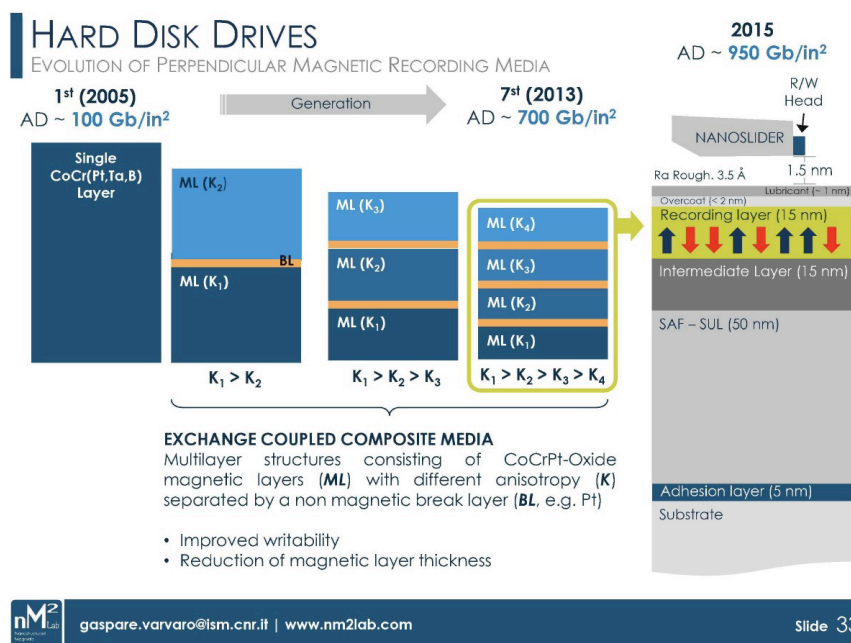


- PMR is the prevailing magnetic storage technology
 - Grain size scaling does not benefit PMR (exchange-dominated)
 - The "exchange-spring" principle in ECC media has guided most of the advances in PMR media since inception



Srinivasan: Magnetic Recording Media.

17. A 2020 NanoInnovation conference presentation by Dr. Gaspare Varvaro of the Nanostructured Magnetic Materials Laboratory (nM²-Lab) in Italy, provides a similar illustration of how Dr. Suess's invention unlocked the path to areal densities far higher than 200 Gb/in²:



https://www.nanoinnovation2020.eu/home/PPT/Hard%20Disk%20Drives%20_%20Magnetic%20Memories_Varvaro.pdf (“*Varvaro: Hard Disk Drives*”).

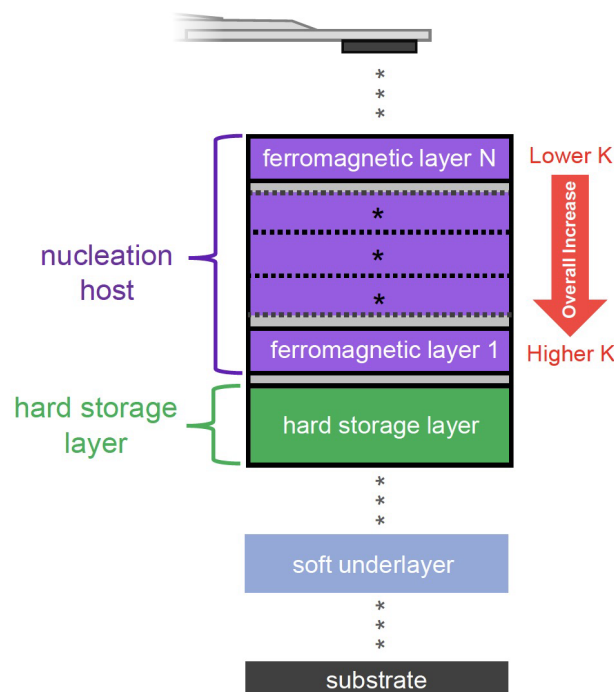
18. In August 2022, MR Tech asserted the ’864 and ’997 patents against Western Digital Technologies, Inc. (“Western Digital”) in *MR Techs. GmbH v. Western Digital Techs., Inc.*, No. 8:22-cv-01599 (C.D. Cal.) (“*MRT-I*”). The accused products included all of WD’s hard disk drives (HDDs) sold in the U.S. since March 27, 2018, the issue date of the ’864 Patent. On July 26, 2024, after an eight-day trial, the jury returned its verdict, finding both patents infringed and not invalid, and awarding \$262,388,800 in damages to MR Tech—a lump sum, reasonable royalty for all past and future infringement until the patents expire. On August 14, 2024, the court entered judgment in accordance with the jury’s verdict and further awarded \$117,267,508 in prejudgment interest as well as post-judgment interest of approximately \$46,000 per day.

19. During the trial, Dr. Mark Re, Seagate’s Chief Technology Officer from 2013 to 2018, confirmed that, like Western Digital, Seagate also adopted Dr. Suess’s invention. *MRT-I*, Dkt. 658 at 127:19-21 (“*Seagate uses Dr. Suess’ inventions in the patents in this case.*”); Dkt. 632 (“*Seagate followed the path that Dr. Suess put forward in his invention.*”). Dr. Re also testified that “Dr. Suess’ two patents in this case are *the foundation on which modern PMR media is built*,” consistent with Dr. Victora’s recognition that “almost all state of the art hard disks rely on [Dr. Suess’s] idea.”

20. Dr. Peter Goglia—Executive Director at Seagate until 2004, VP of R&D at Western Digital until 2007, and President of VeriTekk Solutions (a consulting firm serving the HDD industry) since 2012 where he has studied “technology trends and impact on areal density, technology transitions, areal density growth” (see veritek.com/about)—testified that “[b]y the end of 2007, the average areal density industry-wide was approximately 240 gigabits per square inch.” *MRT-I*, Dkt. 662 at 51:11-14. He then testified that “it was shortly after this that *the*

1 *industry widely adopted the alleged infringing technology of multilayer media with*
 2 *varying anisotropy and layers.”* *Id.* 52:20-53:10. He testified that in fact, Western
 3 Digital would not be able to compete in the market without Dr. Suess’s patented
 4 technology. *Id.* at 54:11-20 (“A. If Western Digital was not able to use multilayer
 5 media with varying anisotropy in the layers, would it be able to compete in terms of
 6 areal density in the market? Q. Not likely. *I don’t know if there’s any other*
 7 *solutions out there, but that’s the commonly accepted solution.”).*

8 21. Accordingly, on information and belief, Defendants’ accused products
 9 use Dr. Suess’s invention to achieve areal densities above 700 Gb/in². In particular,
 10 on information and belief, the accused products include a nucleation host with two
 11 or more ferromagnetic layers that have increasing anisotropy towards an underlying
 12 hard storage layer, where the nucleation host has lower coercive field, and assists in
 13 switching, the hard storage layer.



26 *See, e.g., MRT-I*, Dkt. 628 at 28:18-23 (“[T]he invention consists of a multilayered
 27 nucleation host with an overall increase in anisotropy as you head towards the hard
 28 storage layer, which is on the bottom of this stack.”), 32:4-9 (“[T]he write field ...

1 would start to interact with the first layer. That layer, because it's exchange coupled
 2 to the next layer, would interact with the following layer. And then those would help
 3 to switch the hard storage layer."), 34:10-14 ("[T]he effective coercive field of the
 4 nucleation host is lower than that of the hard storage layer."); C. Papusoi et al.,
 5 *Measurements of Gilbert Damping Parameter α for CoPt-Based and CoFe-Based*
 6 *Films for Magnetic Recording Applications*, 51 J. Phys. D: Appl. Phys. 325002
 7 (2018) ("*Papusoi-2018*") ("Current PMR media have an ECC structure consisting
 8 of several magnetic layers having a vertically graded anisotropy which enables the
 9 reduction of Hsw via an exchange spring effect" and "is expected to remain one of
 10 the key features of future PMR media.").

11 **COUNT 1 – INFRINGEMENT OF THE '864 PATENT**

12 22. Plaintiff realleges and incorporates by reference the foregoing
 13 paragraphs as if fully set forth herein.

14 23. Plaintiff is the owner and assignee of United States Patent No.
 15 9,928,864 titled "Multilayer exchange spring recording media." The '864 Patent was
 16 duly and legally issued by the United States Patent and Trademark Office on March
 17 27, 2018. Plaintiff is the owner and assignee of the '864 Patent with full rights to
 18 pursue recovery of royalties for damages for infringement, including full rights to
 19 recover past and future damages.

20 24. Defendants make, use, offer for sale, sell, and/or import—or sell to
 21 others who import—into the United States products that directly infringe, literally
 22 and/or under the doctrine of equivalents, one or more claims of the '864 Patent.
 23 These infringing products include, without limitation, Defendants' hard disk drives
 24 (HDDs) made, used, sold, or imported into the United States, and all versions and
 25 variations thereof since the '864 Patent issued ("Accused Products"). The Accused
 26 Products include, without limitation, all HDD products listed on Defendants' HDD
 27
 28

1 webpages—including any OEM-branded versions or variations bearing different
2 model names:

- 3 • <https://storage.toshiba.com/consumer-hdd/internal> (e.g., S300 /
4 S300 Pro, N300 / N300 Pro, X300 / X300 Pro, P300, and L200
5 Series HDDs)
- 6 • <https://storage.toshiba.com/consumer-hdd/external> (e.g., Canvio
7 Flex, Canvio Gaming, Canvio Slim, Canvio Advance, Canvio
8 Advance Plus, Canvio Ready, and Canvio Basics Series HDDs)
- 9 • <https://storage.toshiba.com/enterprise-hdd> (e.g., MG11, MG10F,
10 MG10, MG10-D, MG09, MG08, MG08-D, MG07, MG04,
11 AL14SX, and AL15SE Series HDDs)
- 12 • <https://storage.toshiba.com/internal-specialty-hdd> (e.g., MD04-V,
13 DT02-VH, DT02-V, NAS MN, MD07ACA, MD04, DT02, DT01,
14 MQ04, MQ01ABD, MQ01ABF, MQ01ABU-W, MQ01ABU-BW,
15 MQ01ACF, and MQ04-V Series HDDs)

16
17
18 25. Defendants have also infringed, and continue to infringe, claims of the
19 '864 Patent through their design, development, marketing, and sales activity in the
20 United States and abroad. By way of example, Defendants design, develop, and
21 market infringing HDD products in the United States, including at Toshiba
22 America's Irvine, CA headquarters, to sell infringing HDD products to worldwide
23 original equipment manufacturers ("OEMs") that in turn import into the United
24 States computer devices (e.g., laptops, desktops, servers, and/or storage devices) that
25 include infringing HDD products. It is a direct and foreseeable consequence that
26 Defendants' design, development, sales, and marketing activities in the United
27 States and abroad result in worldwide sales of infringing HDDs that are subsequently
28 offered for sale, sold, or imported in the United States.

26. On information and belief, Defendants have had knowledge of the '864 Patent and their infringement of the '864 Patent since at least July or August 2024 when the *MRT-I* trial drew widespread attention in the industry due to the damages amount of over \$262 million and judgment award of \$380 million as well as the massive scope of infringement, with the jury finding that all Western Digital hard disk drives (HDDs) sold in the U.S. since 2018 infringe the '864 Patent. *See, e.g.*, <https://news.bloomberglaw.com/ip-law/western-digital-infringed-austrian-firms-hard-drive-patents>; <https://blocksandfiles.com/2024/08/13/wd-loses-patent-infringement-lawsuit-at-262-million-cost/> (MR Tech “accused WD of misusing Suess’s IP ‘on a massive scale’ by applying it in almost every disk drive it has produced since 2018.”); <https://www.law360.com/articles/1858744/western-digital-owes-305m-over-hard-drive-ip-jury-told> (“Suess said the point of his inventions was to break the superparamagnetic limits based on combining hard and soft magnetic layers, referred to as ‘exchange spring media’ to improve magnetic recording performance. His findings have been cited thousands of times by other scientists and researchers, and Suess said he eventually submitted patent applications for his inventions in 2006.”).

27. Moreover, Western Digital is one of just two competitors to Toshiba in a three-player market (the third being Seagate). The *MRT-I* verdict also implicated Defendants’ HDDs because, like the infringing Western Digital HDDs, Defendants’ HDDs use magnetic recording media that include two or more ferromagnetic layers with increasing anisotropy toward an underlying hard storage layer. *See* Infringement Background.

28. In addition, on March 21, 2012, Dr. Suess provided notice to Defendants by sending the application for the '864 Patent, stating that it “might be of utmost interest for Toshiba” and suggesting a meeting to discuss potential licensing. On March 23, 2012, Defendants responded stating that their HDD development division was not interested in pursuing a potential license.

29. Defendants, with knowledge of the '864 Patent and their infringement of the '864 Patent—since July or August 2024 as discussed above, or at least through service of this complaint—have induced others to infringe under 35 U.S.C. § 271(b). For example, with knowledge that their HDD products infringe the '864 Patent, Defendants have and continue to develop, design, market, and sell infringing HDD products to OEMs in the United States and abroad, with knowledge, expectation, specific intent, and foresight that OEMs and parties related to OEMs, including customers, distributors, counterparties and intermediaries, will infringe the '864 Patent by importing, selling, offering to sell, using, and/or making infringing HDD products in the United States.

30. Defendants have and continue to specifically intend that their customers infringe the '864 Patent because Defendants have knowledge that the Accused Products infringe claims of the '864 Patent including, without limitation, Claim 1. *See, e.g.*, Infringement Background. Defendants, with knowledge of the '864 Patent, designs, manufactures and sells HDD products with the claimed “magnetic recording medium” of the '864 Patent, including, without limitation, Claim 1, in the United States and abroad. Defendants, *inter alia*, offers to sell and sells HDD products that include every limitation of at least Claim 1 of the '864 Patent to OEM customers with the knowledge and specific intent that the OEM customer will include the infringing HDD product in its computer products (e.g., laptop, desktop, server, and/or storage computer products) that the OEM customer will import, offer to sell, and sell in the United States. For example, Defendants knowingly and intentionally instruct their customers, OEMs, distributors, and retailers to infringe at least through product documentation, design specifications, data sheets, development content, white papers, and other materials, such as those located on Toshiba’s website at storage.toshiba.com. *See, e.g.*, <https://storage.toshiba.com/consumer-hdd/internal>; <https://storage.toshiba.com/consumer-hdd/external>; <https://storage.toshiba.com/enterprise-hdd>;

1 <https://storage.toshiba.com/internal-specialty-hdd;> [https://toshiba.semicon-](https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html)
 2 [storage.com/us/storage/about-our-storage-products/overview.html](https://storage.toshiba.com/us/storage/about-our-storage-products/overview.html). Defendants
 3 have specific intent that the OEM customer will import, offer to sell, and sell
 4 computer products with infringing HDDs in the United States including because
 5 Defendants specifically design infringing HDDs to work within OEM products that
 6 Defendants know the OEM offers for sale and sells in the U.S.

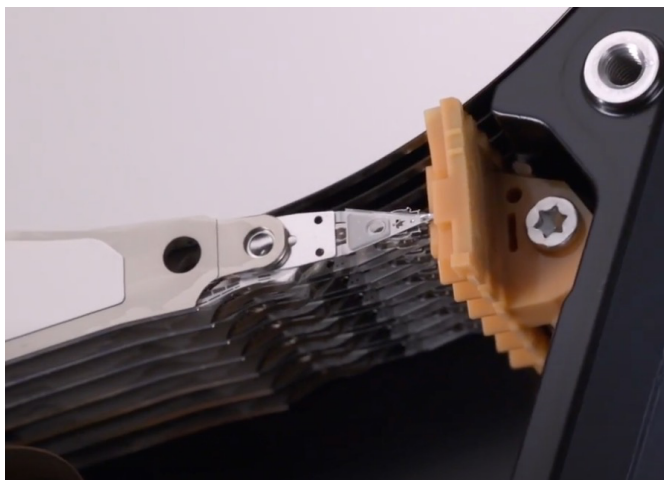
7 31. For example, the infringing HDD drives include controllers with SATA
 8 and/or SAS connectivity and standard 2.5 inch and/or 3.5 inch form factors for the
 9 purpose of use within OEM systems that will be imported, sold, and/or used in the
 10 United States. *See, e.g.,* <https://storage.toshiba.com/consumer-hdd/internal;>
 11 <https://storage.toshiba.com/consumer-hdd/external;> <https://storage.toshiba.com/enterprise-hdd;>
 12 <https://storage.toshiba.com/internal-specialty-hdd;>
 13 [https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/](https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html)
 14 [overview.html](https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html) (“Toshiba Electronic Devices & Storage Corporation and its affiliates
 15 (Toshiba) supply a wide range of innovative hard disk drive (HDD) products to meet
 16 the varied demands of the diversified storage marketplace. Products include high
 17 capacity power-efficient storage for Cloud Data Centers, capacity and performance
 18 HDDs for Enterprise IT, client HDDs for PC/Desktop, and specialty drives for
 19 Surveillance, NAS systems, set-top box video, gaming and external storage. Toshiba
 20 aims to continue to advance HDD technologies and innovation to meet and exceed
 21 customer requirements across a broad spectrum of storage market segments.”).

22 32. Defendants actively market, advertise, and promote their infringing
 23 HDD drives and the added capacity gains from infringement of the ’864 Patent in
 24 the United States, knowing that the infringing drives will be offered for sale and sold
 25 in the United States by their customers, including OEMs. *See, e.g.,*
 26 <https://storage.toshiba.com/consumer-hdd/internal;> <https://storage.toshiba.com/consumer-hdd/external;>
 27 <https://storage.toshiba.com/enterprise-hdd;>
 28 <https://storage.toshiba.com/internal-specialty-hdd;> [https://toshiba.semicon-](https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html)

1 [storage.com/us/storage/about-our-storage-products/overview.html](https://www.storage.com/us/storage/about-our-storage-products/overview.html). Defendants'
2 induced infringement has resulted in direct and foreseeable damages including from
3 their worldwide sales of infringing HDD products that are later imported, used, or
4 sold by others in the U.S.

5 33. Defendants have had knowledge of or have been willfully blind to the
6 '864 Patent and the infringing nature of the accused products since at least July or
7 August 2024 as discussed above or at least the filing of this Complaint. Despite this
8 knowledge, Defendants have continued to make, use, offer for sale, sell and/or
9 import the Accused Products knowing such products infringe the '864 Patent.
10 Defendants' infringement of the '864 Patent is intentional, purposeful, and willful
11 for the additional reason that Defendants know that at least their CMR and SMR
12 HDD products must infringe to compete in the United States, and therefore willfully
13 infringe the '864 Patent in an attempt to maintain and/or grow their market share by
14 continuing to design, market, and sell infringing HDDs. *See* Infringement
15 Background.

16 34. The Accused Products satisfy all limitations of one or more claims of
17 the '864 Patent. *See* Infringement Background. For example, the Accused Products
18 include "A magnetic recording medium." In particular, the Accused Products
19 include at least one disk that comprises a perpendicular magnetic recording (PMR)
20 medium, e.g.:



Toshiba TAEC, *Embrace a Tradition of Being at The Cutting Edge* | Toshiba HDDs, YouTube (Apr. 19, 2017), <https://www.youtube.com/watch?v=e4yvdaVwmF0>.

35. The Accused Products include “an essentially non-magnetic substrate.” On information and belief, the Accused Products include a glass or AlMg substrate, both of which are non-magnetic. The 2016 book chapter *Conventional Perpendicular Magnetic Recording Media* in *Ultrahigh-Density Magnetic Recording* (2016) (“*Conventional PMR Media*”) explains that in PMR media, “AlMg substrates for desktop and most server products and glass substrates for mobile and partial server products are typically used.” See *Conventional PMR Media* at 138.

36. The Accused Products include “an underlayer formed on the non-magnetic substrate.” The *MRT-I* court construed “underlayer” as “one or more layers on which the hard magnetic storage layer is formed.” *MRT-I*, Dkt. 195. The Accused Products include a soft magnetic underlayer (SUL) formed on the non-magnetic substrate:

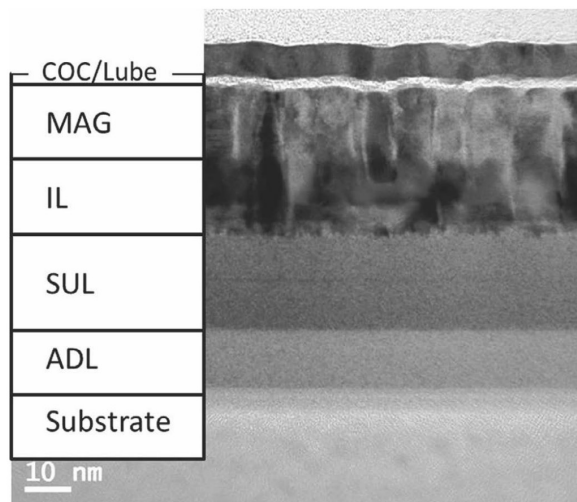
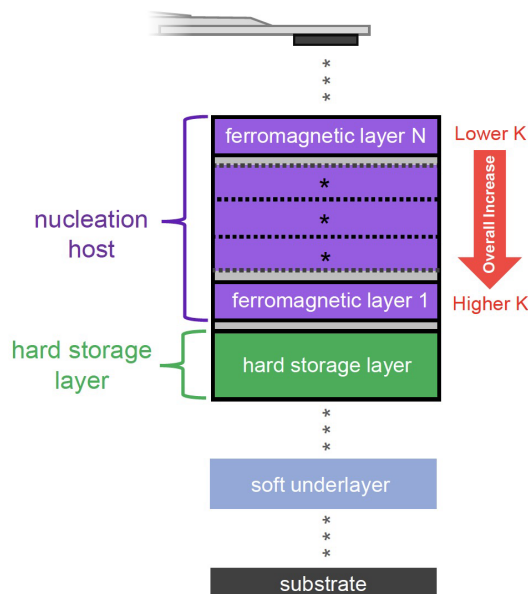


Figure 3.2 Definition of layer structure on a cross-sectional TEM image of typical perpendicular media.

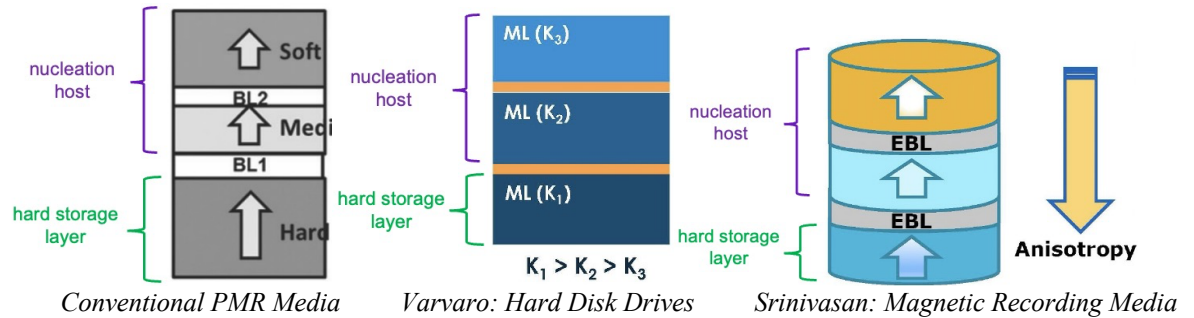
1 *Conventional PMR Media* at 138 (“PMR media consist of an adhesion layer (AOL),
 2 *an SUL*, an intermediate layer (IL), a magnetic recording layer (MAG), a carbon
 3 overcoating (COC), and a lubricant layer (lube), as shown in Fig. 3.2.”).

4
 5 37. The Accused Products include “an exchange coupled magnetic
 6 multilayer structure.” The *MRT-I* court construed “exchange coupled magnetic
 7 multilayer structure” as “a structure including a nucleation host that is exchange
 8 coupled to a hard magnetic storage layer,” where “exchange coupled” means “the
 9 magnetic moments in the nucleation host interact through exchange with the
 10 moments in the hard magnetic storage layer.” *MRT-I*, Dkt. 195. On information and
 11 belief, the Accused Products include a magnetic multilayer structure comprising a
 12 nucleation host (purple) that is formed on and exchange coupled to a hard magnetic
 13 storage layer (green):



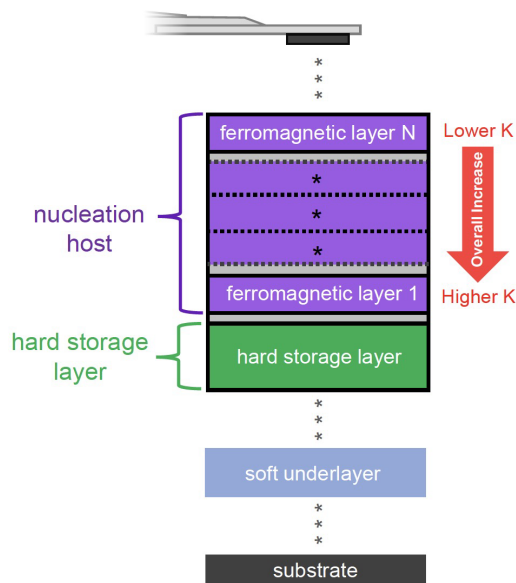
24 *See* Infringement Background; *see also Papusoi-2018* (“Current PMR media have
 25 an ECC structure consisting of several magnetic layers having a vertically graded
 26 anisotropy which enables the reduction of H_{sw} via an exchange spring effect” and
 27 “is expected to remain one of the key features of future PMR media.”).

38. This is also evidenced in the industry references discussed in Infringement Background above and annotated below, with the bottom mag layer being the hard magnetic storage layer and the stack containing the upper mag layers being the nucleation host:



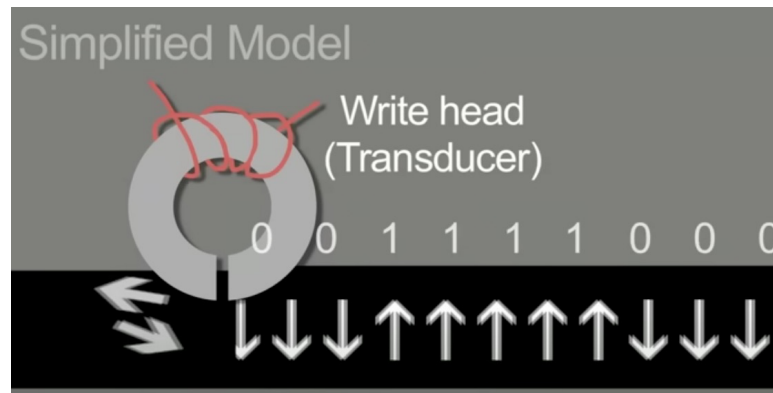
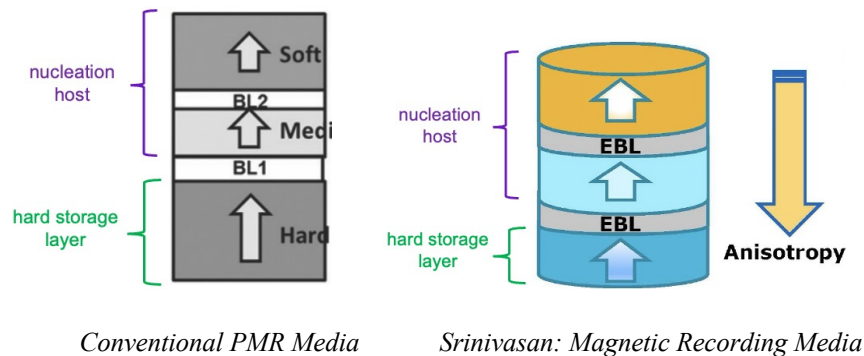
See also *Victora IEEE Letter* (“[Dr. Suess’s] new media demonstrated that the coercivity can be partially decoupled from thermal stability by the use of multiple magnetic layers with graded anisotropy” and “was quickly adopted by industry: nowadays, almost all state of the art hard disks rely on this idea.”); <https://scvmag.org/event/recent-developments-in-magnetic-recording-media/> (“Another major breakthrough was the introduction of the exchange-spring (ES) media ... [which] allowed for improved media writability and switching field distributions, without sacrificing thermal stability.”).

39. The Accused Products include a hard magnetic storage layer, having a first coercive field $H_s > 0.5$ T, formed on the underlayer. The *MRT-I* court construed “hard magnetic storage layer” as “a magnetic layer that stores information in magnetically oriented bits,” and “coercive field” as “a property of magnetic materials that provides a measure of the ability of a ferromagnetic material to withstand an external magnetic field without becoming demagnetized.” *MRT-I*, Dkt. 195. On information and belief, the Accused Products include a hard magnetic storage layer (green) formed on the SUL:



See Infringement Overview.

40. The hard storage layer in the accused products stores information in magnetically oriented bits, e.g., upward or downward as indicated by the arrows below.



Seagate Technology, *How a Hard Disk Drive Works*, YouTube (Aug. 7, 2012), <https://www.youtube.com/watch?v=NtPc0jI21i0>.

41. The hard storage layer in the accused products has a coercive field H_s above 0.5 T. A coercive field (H_c) is determined using the formula $H_c = 2 K_{eff}/M_{eff}$ where K_{eff} is the average anisotropy constant and M_{eff} is the average saturation magnetization. See, e.g., '864 Patent 6:56; *Papusoi-2018* ("Since recording occurs on a short time scale (~ 1 ns), the medium coercivity and saturation field approach the anisotropy field $H_k = 2K/M_s$ where M_s is the saturation magnetization."). On information and belief, the hard storage layer in the accused products is made of a CoCrPt or similar alloy having a 2K/M coercive field of approximately 2.0 T. See *Varvaro: Hard Disk Drives* (PMR media includes "multilayer structures consisting of CoCrPt-Oxide magnetic layers (ML) with different anisotropy (K)"); *Papusoi-2018* ("The magnetic recording layers of PMR media typically have $H_k \sim 20$ kOe.").¹

42. The hard storage layer (part of the "MAG" stack in the right figure below), is formed on the underlayer (SUL).

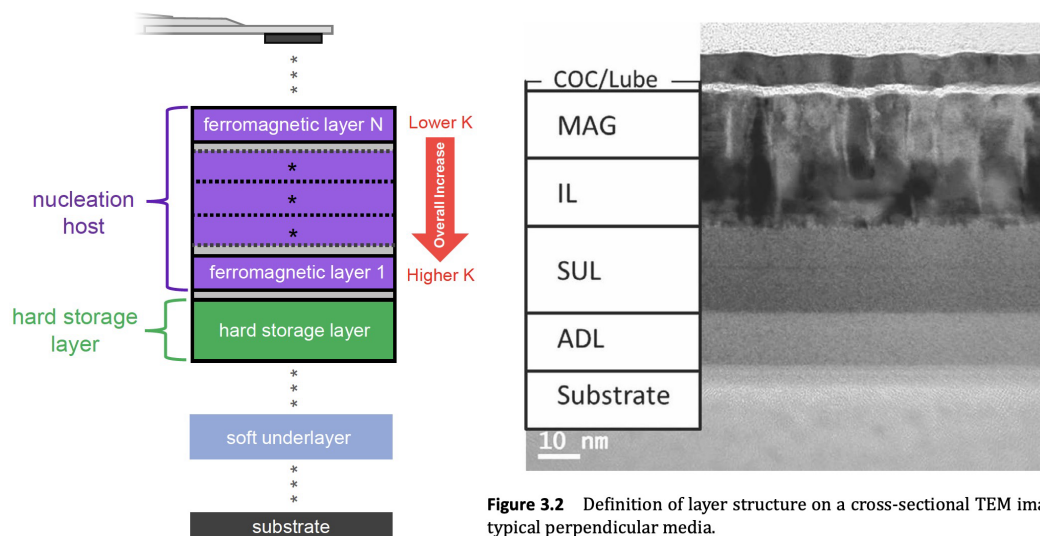


Figure 3.2 Definition of layer structure on a cross-sectional TEM image of typical perpendicular media.

See Infringement Background; *Conventional PMR Media* at 138 ("PMR media consist of an adhesion layer (AOL), an SUL, an intermediate layer (IL), a magnetic

¹ 20kOe converts to 2.0 T.

1 recording layer (MAG), a carbon overcoating (COC), and a lubricant layer (lube),
 2 as shown in Fig. 3.2.”); *Papusoi-2018* (“In PMR, a magnetically soft-underlayer
 3 (SUL), located below the magnetic recording layer(s), is used to enhance the field
 4 acting on the recording layer(s)”).

5
 6 43. The Accused Products include “a nucleation host, having a second
 7 coercive field H_n without the hard magnetic storage layer, lower than the first
 8 coercive field, $H_n < H_s$.” The *MRT-I* court construed “nucleation host” as “a structure
 9 that includes ferromagnetic layers that assist in switching the hard magnetic storage
 10 layer, and optional coupling layers,” and “coupling layer” as “layer that alters the
 11 coupling between adjacent layers.” *MRT-I*, Dkt. 195. As discussed above regarding
 12 the “exchange coupled magnetic multilayer structure” limitation, the accused
 13 products include a nucleation host having ferromagnetic layers that assist in
 14 switching the hard magnetic storage layer and coupling layers that alter the exchange
 15 coupling between the ferromagnetic layers. *See also* Infringement Background;
 16 *Papusoi-2018* (“Current PMR media have an ECC structure consisting of several
 17 magnetic layers having a vertically graded anisotropy which enables the reduction
 18 of [the minimum switching field] H_{sw} via an exchange spring effect.”).

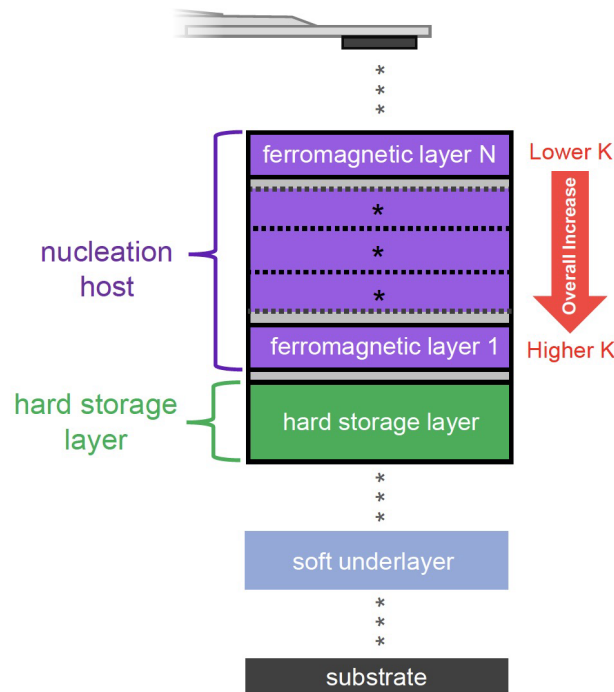
19 44. The nucleation host has a coercive field H_n that is lower than H_s . *See*,
 20 *e.g.*, *Victoria IEEE Letter* (“[Dr. Suess’s] new media demonstrated that the coercivity
 21 can be partially decoupled from thermal stability by the use of multiple magnetic
 22 layers with graded anisotropy” and “was quickly adopted by industry: nowadays,
 23 almost all state of the art hard disks rely on this idea.”);
 24 <https://scvmag.org/event/recent-developments-in-magnetic-recording-media/>
 25 (“Another major breakthrough was the introduction of the exchange-spring (ES)
 26 media ... [which] allowed for improved media writability and switching field
 27 distributions, without sacrificing thermal stability.”).

28 45. As discussed above, a coercive field (H_c) can be determined using the

1 formula $H_c = 2 K_{eff}/M_{eff}$ where K_{eff} is the weighted average anisotropy constant and
 2 M_{eff} is the weighted average saturation magnetization. *See, e.g.*, ‘864 Patent 6:56;
 3 *Papusoi-2018* (“Since recording occurs on a short time scale (~ 1 ns), the medium
 4 coercivity and saturation field approach the anisotropy field $H_k = 2K/M_s$ where M_s
 5 is the saturation magnetization.”). Because the nucleation host is formed of multiple
 6 layers, K_{eff} can be determined by adding the $K \cdot l$ values for the layers (where l is
 7 layer thickness) and dividing the sum by the total thickness of the layers. *See, e.g.*,
 8 ‘864 Patent 6:47-51. Similarly, M_{eff} can be determined by adding the $M \cdot l$ values for
 9 the layers (where l is layer thickness) and dividing the sum by the total thickness of
 10 the layers.

11 46. Because $H_k = 2K/M$, H_n can be approximated as $H_{k,eff}$ of the nucleation
 12 host, which is the weighted average H_k ($2K/M$) of all the layers in the nucleation
 13 host. This can be simplified by excluding the coupling layers because their H_k values
 14 are much lower than the ferromagnetic layers and thus would only decrease H_n . In
 15 other words, removing the coupling layers provides a maximum H_n and if that value
 16 is lower than H_s , then H_n is necessarily lower than H_s . On information and belief,
 17 the maximum H_n (coercive field of the nucleation host) in the accused products is
 18 < 1.8 T and thus, H_n is lower than H_s (approximately 2.0 T, as discussed above.”
 19 *See also Papusoi-2018* (“Current PMR media have an ECC structure consisting of
 20 several magnetic layers having a vertically graded anisotropy which enables the
 21 reduction of [the minimum switching field] H_{sw} via an exchange spring effect.”).

22 47. The nucleation host in the accused products “is formed on the hard
 23 magnetic storage layer such that the hard magnetic storage layer is between the
 24 nucleation host and the non-magnetic substrate” and “is exchange coupled to the
 25 hard magnetic storage layer.” As discussed above regarding the “exchange coupled
 26 magnetic multilayer structure” limitation, the nucleation host (purple) is formed on
 27 and exchange coupled to the hard magnetic storage layer (green) which is between
 28 the nucleation host and the non-magnetic substrate (black):



See also Infringement Background.

48. The nucleation host in the accused products comprises ferromagnetic layers with increasing anisotropy constant K from layer to layer. The *MRT-I* court construed “nucleation host ... comprises ferromagnetic layers with increasing anisotropy constant K from layer to layer” as “nucleation host includes two or more ferromagnetic layers which have anisotropy constants K , and the values of the anisotropy constants K for the layers increase as the layers get closer to the hard magnetic storage layer, such that the nucleation host has an overall increase in anisotropy toward the hard magnetic storage layer.” *MRT-I*, Dkt. 195. The court also ruled that the claimed nucleation host can have plateaus or decreasing anisotropy constants K across adjacent ferromagnetic layers so long as there is an overall increase toward the hard storage layer. *Id.*

49. As shown above, the nucleation host in the accused products includes two or more ferromagnetic layers with anisotropy constants K that increase toward the hard magnetic storage layer, such that the nucleation host has an overall increase in anisotropy toward the hard magnetic storage layer. *See also* Infringement

Background; *MRT-I*, Dkt. 628 at 28:18-23 (“[T]he invention consists of a multilayered nucleation host with an overall increase in anisotropy as you head towards the hard storage layer, which is on the bottom of this stack.”); Dkt. 658 at 127:19-21 (“Seagate uses Dr. Seuss’ inventions in the patents in this case.”); *Papusoi-2018* (“Current PMR media have an ECC structure consisting of several magnetic layers having a vertically graded anisotropy which enables the reduction of Hsw via an exchange spring effect” and “is expected to remain one of the key features of future PMR media.”).

50. Defendants directly infringe, induce others to infringe, and contribute to the infringement by others of the ’864 Patent under 35 U.S.C. § 271(a), (b), and (c) in this District and elsewhere.

51. Defendants’ infringement has been and continues to be willful, permitting Plaintiff to seek enhanced damages under 35 U.S.C. § 284. Defendants have known, or been willfully blind to the fact, that making, using, offering to sell, selling, and importing the accused products constitutes infringement of the ’864 Patent.

52. Plaintiff has complied with all requirements of 35 U.S.C. § 287 because it has not and does not make or sell any patented articles in the United States.

53. As a result of Defendants’ infringement of the ’864 Patent, Plaintiff is entitled to monetary damages in an amount adequate to compensate for Defendants’ infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendants, together with interest and costs as fixed by the Court.

COUNT 2 – INFRINGEMENT OF THE ’997 PATENT

54. Plaintiff realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

55. Plaintiff is the owner and assignee of United States Patent No. 11,138,997 titled “Multilayer exchange spring recording media.” The ’997 Patent was duly and legally issued by the United States Patent and Trademark Office on

1 October 5, 2021. Plaintiff is the owner and assignee of the '997 Patent with full rights
2 to pursue recovery of royalties for damages for infringement, including full rights to
3 recover past and future damages.

4 56. Defendants make, use, offer for sale, sell, and/or import—or sell to
5 others who import—into the United States certain products that directly infringe,
6 literally and/or under the doctrine of equivalents, one or more claims of the '997
7 Patent. These infringing products include, without limitation, Defendant's hard disk
8 drives (HDDs) made, used, sold, or imported into the United States, and all versions
9 and variations thereof since the '997 Patent issued. *See* Count 1.

10 57. Defendants have also infringed, and continue to infringe, claims of the
11 '997 Patent through their design, development, marketing, and sales activity in the
12 United States and abroad. By way of example, Defendants design, develop, and
13 market infringing HDD products in the United States, including at Toshiba
14 America's Irvine, CA headquarters, to sell infringing HDD products to worldwide
15 original equipment manufacturers ("OEMs") that in turn import into the United
16 States computer devices (e.g., laptops, desktops, servers, and/or storage devices) that
17 include infringing HDD products. It is a direct and foreseeable consequence that
18 Defendants' design, development, sales, and marketing activities in the United
19 States and abroad result in worldwide sales of infringing HDDs that are subsequently
20 offered for sale, sold, or imported in the United States.

21 58. On information and belief, Defendants have had knowledge of the '997
22 Patent and their infringement of the '997 Patent since at least July or August 2024
23 when the *MRT-I* trial drew widespread attention in the industry due to the damages
24 amount of over \$262 million and judgment award of \$380 million as well as the
25 massive scope of infringement, with the jury finding that all Western Digital hard
26 disk drives (HDDs) sold in the U.S. since the '997 Patent issued infringe.
27 *See* Count I.

28 59. Moreover, Western Digital is one of just two competitors to Toshiba in

1 a three-player market (the third being Seagate). The *MRT-I* verdict also implicated
2 Defendants' HDDs because, like the infringing Western Digital HDDs, Defendants'
3 HDDs use magnetic recording media that include two or more ferromagnetic layers
4 with increasing anisotropy toward an underlying hard storage layer.
5 *See* Infringement Background.

6 60. In addition, on March 21, 2012, Dr. Suess provided notice to
7 Defendants by sending the parent application to the '997 Patent, stating that it "might
8 be of utmost interest for Toshiba" and suggesting a meeting to discuss potential
9 licensing. On March 23, 2012, Defendants responded stating that their HDD
10 development division was not interested in pursuing a potential license.

11 61. Defendants, with knowledge of the '997 Patent and their infringement
12 of the '997 Patent—since July or August 2024 as discussed above, or at least through
13 service of this complaint—have induced others to infringe under 35 U.S.C. § 271(b).
14 For example, with knowledge that their HDD products infringe the '997 Patent,
15 Defendants have and continue to develop, design, market, and sell infringing HDD
16 products to OEMs in the United States and abroad, with knowledge, expectation,
17 specific intent, and foresight that OEMs and parties related to OEMs, including
18 customers, distributors, counterparties and intermediaries, will infringe the
19 '997 Patent by importing, selling, offering to sell, using, and/or making infringing
20 HDD products in the United States.

21 62. Defendants have and continue to specifically intend that their
22 customers infringe the '997 Patent because Defendants have knowledge that the
23 Accused Products infringe claims of the '997 Patent including, without limitation,
24 Claim 1. *See, e.g.*, Infringement Background. Defendants, with knowledge of the
25 '997 Patent, designs, manufactures and sells HDD products with the claimed
26 "magnetic recording system" of the '997 Patent, including, without limitation,
27 Claim 1, in the United States and abroad. Defendants, *inter alia*, offer to sell and sell
28 HDD products that include every limitation of at least Claim 1 of the '997 patent to

OEM customers with the knowledge and specific intent that the OEM customer will include the infringing HDD product in its computer products (e.g., laptop, desktop, server, and/or storage computer products) that the OEM customer will import, offer to sell, and sell in the United States. *See, e.g.,* <https://storage.toshiba.com/consumer-hdd/internal>; <https://storage.toshiba.com/consumer-hdd/external>; <https://storage.toshiba.com/enterprise-hdd>; <https://storage.toshiba.com/internal-specialty-hdd>; <https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html>. Defendants have specific intent that the OEM customer will import, offer to sell, and sell computer products with infringing HDDs in the United States including because Defendants specifically design infringing HDDs to work within OEM products that Defendants know the OEM offers for sale and sells in the U.S.

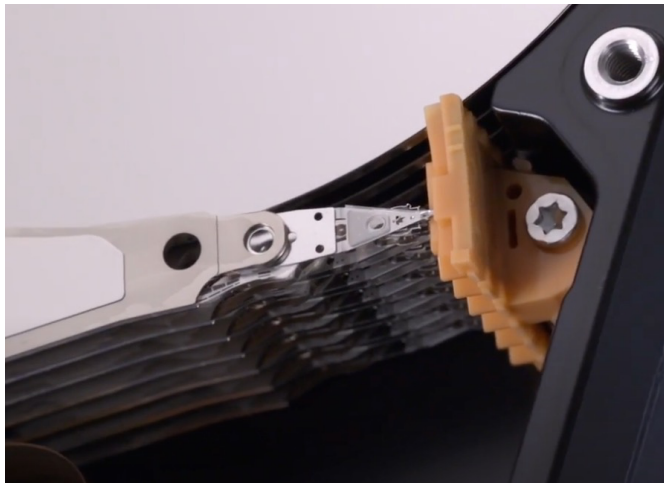
63. For example, the infringing HDD drives include controllers with SATA and/or SAS connectivity and standard 2.5 inch and/or 3.5 inch form factors for the purpose of use within OEM systems that will be imported, sold, and/or used in the United States. *See, e.g.,* <https://storage.toshiba.com/consumer-hdd/internal>; <https://storage.toshiba.com/consumer-hdd/external>; <https://storage.toshiba.com/enterprise-hdd>; <https://storage.toshiba.com/internal-specialty-hdd>; <https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html> (“Toshiba Electronic Devices & Storage Corporation and its affiliates (Toshiba) supply a wide range of innovative hard disk drive (HDD) products to meet the varied demands of the diversified storage marketplace. Products include high capacity power-efficient storage for Cloud Data Centers, capacity and performance HDDs for Enterprise IT, client HDDs for PC/Desktop, and specialty drives for Surveillance, NAS systems, set-top box video, gaming and external storage. Toshiba aims to continue to advance HDD technologies and innovation to meet and exceed customer requirements across a broad spectrum of storage market segments.”).

64. Defendants actively market, advertise, and promote their infringing HDD drives and the added capacity gains from infringement of the ’997 Patent in

1 the United States, knowing that the infringing drives will be offered for sale and sold
2 in the United States by their customers, including OEMs. *See, e.g.,*
3 <https://storage.toshiba.com/consumer-hdd/internal>; <https://storage.toshiba.com/consumer-hdd/external>;
4 <https://storage.toshiba.com/enterprise-hdd>;
5 <https://storage.toshiba.com/internal-specialty-hdd>; <https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html>. Defendants'
6 induced infringement has resulted in direct and foreseeable damages including from
7 their worldwide sales of infringing HDD products that are later imported, used, or
8 sold by others in the U.S.

10 65. Defendants have had knowledge of or have been willfully blind to the
11 '997 Patent and the infringing nature of the accused products since July or August
12 2024 as discussed above or at least the filing of this Complaint. Despite this
13 knowledge, Defendants have continued to make, use, offer for sale, sell and/or
14 import the Accused Products knowing such products infringe the '997 Patent.
15 Defendants' infringement of the '997 Patent is intentional, purposeful, and willful
16 for the additional reason that Defendants know that their HDD products must
17 infringe to compete in the United States, and therefore willfully infringe the
18 '997 Patent in an attempt to maintain and/or grow their market share by continuing
19 to design, market, and sell infringing HDDs. *See* Infringement Background.

20 66. The Accused Products satisfy all limitations of one or more claims of
21 the '997 Patent. Claim 1 of the '997 Patent recites a magnetic recording system
22 comprising a writing head and a disk including the same magnetic recording medium
23 as '864 Patent claim 1. All accused HDDs contain magnetic recording systems
24 (perpendicular magnetic recording (PMR) systems) that include a writing head and
25 a disk, e.g.:



Toshiba TAEC, *Embrace a Tradition of Being at The Cutting Edge* | Toshiba HDDs, YouTube (Apr. 19, 2017), <https://www.youtube.com/watch?v=e4yvdaVwmF0>.

67. The magnetic recording medium of the disks in the accused products meet the magnetic recording medium elements recited in '997 Patent claim 1 for the same reasons as '864 Patent claim 1. *See* Count 1.

68. Defendants directly infringe, induce others to infringe, and contribute to the infringement by others of the '997 Patent under 35 U.S.C. § 271(a), (b), and (c) in this District and elsewhere.

69. Defendants' infringement has been and continues to be willful, permitting Plaintiff to seek enhanced damages under 35 U.S.C. § 284. Defendants have known, or been willfully blind to the fact, that making, using, offering to sell, selling, and importing the accused products constitutes infringement of the '997 Patent.

70. Plaintiff has complied with all requirements of 35 U.S.C. § 287 because it has not and does not make or sell any patented articles in the United States.

71. As a result of Defendants' infringement of the '997 Patent, Plaintiff is entitled to monetary damages in an amount adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendants, together with interest and costs as fixed by the Court.

COUNT 3 – INFRINGEMENT OF THE '734 PATENT

72. Plaintiff realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

73. Plaintiff is the owner and assignee of U.S. Patent No. 12,020,734 titled “Multilayer exchange spring recording media.” The '734 Patent was duly and legally issued by the United States Patent and Trademark Office on June 25, 2024. Plaintiff is the owner and assignee of the ' 734 Patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

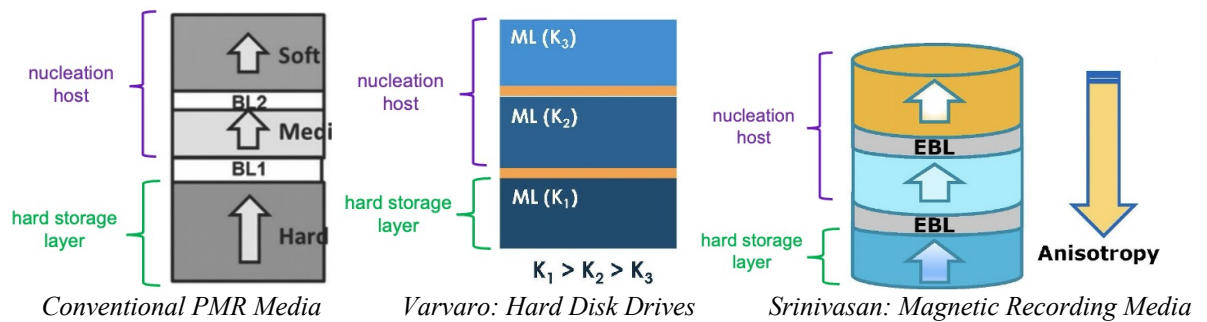
74. Defendants make, use, offer for sale, sell, and/or import—or sell to others who import—into the United States certain products that directly infringe, literally and/or under the doctrine of equivalents, one or more claims of the '734 Patent. These infringing products include, without limitation, Defendant’s hard disk drives (HDDs) made, used, sold, or imported into the United States, and all versions and variations thereof, since the '734 Patent issued. *See* Count 1.

75. Defendants have also infringed, and continue to infringe, claims of the '734 Patent through their design, development, marketing, and sales activity in the United States and abroad. By way of example, Defendants design, develop, and market infringing HDD products in the United States, including at Toshiba America’s Irvine, CA headquarters, to sell infringing HDD products to worldwide original equipment manufacturers (“OEMs”) that in turn import into the United States computer devices (e.g., laptops, desktops, servers, and/or storage devices) that include infringing HDD products. It is a direct and foreseeable consequence that Defendants’ design, development, sales, and marketing activities in the United States and abroad result in worldwide sales of infringing HDDs that are subsequently offered for sale, sold, or imported in the United States.

76. On information and belief, Defendants have had knowledge of the '734 Patent and their infringement of the '734 Patent since at least August 2024

when Plaintiff filed suit against Western Digital for infringement of the '734 Patent ("MRT-IP") shortly after the *MRT-I* trial drew widespread attention in the industry due to the damages amount of over \$262 million and judgment award of \$380 million as well as the massive scope of infringement, with the jury finding that all Western Digital hard disk drives (HDDs) sold in the U.S. since the '734 Patent issued infringe. *See* Count I.

77. Moreover, Western Digital is one of just two competitors to Toshiba in a three-player market (the third being Seagate). The *MRT-I* verdict also implicated Defendants' HDDs because, like the infringing Western Digital HDDs, Defendants' HDDs use magnetic recording media that include two or more ferromagnetic layers with increasing anisotropy toward an underlying hard storage layer. *See* Infringement Background. And claim 1 of the '734 Patent recites a substantially similar magnetic recording system as claim 1 of the '997 Patent except for an additional limitation requiring that at least two ferromagnetic layers are exchange coupled with an exchange coupling layer, which the accused products also meet (the exchange coupling layer is BL2 in left figure, the upper orange layer in middle figure, and the upper EBL in right figure):



See also Infringement Background.

78. Thus, as the *MRT-II* court found, knowledge of infringement of the '997 Patent means it there is likely knowledge of infringement of the '734 Patent. *MRT-II*, Dkt. 32 at 8 ("Consequently, since Western Digital had knowledge that the '997 Patent was infringing, and the '734 Patent was a continuation of the '997 Patent, it

likely had knowledge that the '734 Patent was also infringing.”).

79. In addition, on March 21, 2012, Dr. Suess provided notice to Defendants by sending the original parent application to the '734 Patent, stating that it “might be of utmost interest for Toshiba” and suggesting a meeting to discuss potential licensing. On March 23, 2012, Defendants responded stating that their HDD development division was not interested in pursuing a potential license.

80. Defendants, with knowledge of the '734 Patent and their infringement of the '734 Patent—since August 2024 as discussed above, or at least through service of this complaint—have induced others to infringe under 35 U.S.C. § 271(b). For example, with knowledge that their HDD products infringe the '734 Patent, Defendants have and continue to develop, design, market, and sell infringing HDD products to OEMs in the United States and abroad, with knowledge, expectation, specific intent, and foresight that OEMs and parties related to OEMs, including customers, distributors, counterparties and intermediaries, will infringe the '734 Patent by importing, selling, offering to sell, using, and/or making infringing HDD products in the United States.

81. Defendants have and continue to specifically intend that their customers infringe the '734 Patent because Defendants have knowledge that the Accused Products infringe claims of the '734 Patent including, without limitation, Claim 1. *See, e.g.*, Infringement Background. Defendants, with knowledge of the '734 Patent, designs, manufactures and sells HDD products with the claimed “magnetic recording system” of the '734 Patent, including, without limitation, Claim 1, in the United States and abroad. Defendants, *inter alia*, offer to sell and sell HDD products that include every limitation of at least Claim 1 of the '734 patent to OEM customers with the knowledge and specific intent that the OEM customer will include the infringing HDD product in its computer products (e.g., laptop, desktop, server, and/or storage computer products) that the OEM customer will import, offer to sell, and sell in the United States. *See, e.g.*, <https://storage.toshiba.com/consumer->

1 [hdd/internal](#); <https://storage.toshiba.com/consumer-hdd/external>; <https://storage.toshiba.com/enterprise-hdd>;
 2 <https://storage.toshiba.com/internal-specialty-hdd>;
 3 [https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/](https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html)
 4 [overview.html](#). Defendants have specific intent that the OEM customer will import,
 5 offer to sell, and sell computer products with infringing HDDs in the United States
 6 including because Defendants specifically design infringing HDDs to work within
 7 OEM products that Defendants know the OEM offers for sale and sells in the U.S.

8 82. For example, the infringing HDD drives include controllers with SATA
 9 and/or SAS connectivity and standard 2.5 inch and/or 3.5 inch form factors for the
 10 purpose of use within OEM systems that will be imported, sold, and/or used in the
 11 United States. *See, e.g.,* <https://storage.toshiba.com/consumer-hdd/internal>;
 12 <https://storage.toshiba.com/consumer-hdd/external>; <https://storage.toshiba.com/enterprise-hdd>;
 13 <https://storage.toshiba.com/internal-specialty-hdd>;
 14 [https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/](https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html)
 15 [overview.html](#) (“Toshiba Electronic Devices & Storage Corporation and its affiliates
 16 (Toshiba) supply a wide range of innovative hard disk drive (HDD) products to meet
 17 the varied demands of the diversified storage marketplace. Products include high
 18 capacity power-efficient storage for Cloud Data Centers, capacity and performance
 19 HDDs for Enterprise IT, client HDDs for PC/Desktop, and specialty drives for
 20 Surveillance, NAS systems, set-top box video, gaming and external storage. Toshiba
 21 aims to continue to advance HDD technologies and innovation to meet and exceed
 22 customer requirements across a broad spectrum of storage market segments.”).

23 83. Defendants actively market, advertise, and promote their infringing
 24 HDD drives and the added capacity gains from infringement of the ’734 Patent in
 25 the United States, knowing that the infringing drives will be offered for sale and sold
 26 in the United States by their customers, including OEMs. *See, e.g.,*
 27 <https://storage.toshiba.com/consumer-hdd/internal>; <https://storage.toshiba.com/consumer-hdd/external>;
 28 <https://storage.toshiba.com/enterprise-hdd>;

1 <https://storage.toshiba.com/internal-specialty-hdd;> [https://toshiba.semicon-](https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html)
 2 [storage.com/us/storage/about-our-storage-products/overview.html](https://toshiba.semicon-storage.com/us/storage/about-our-storage-products/overview.html). Defendants'
 3 induced infringement has resulted in direct and foreseeable damages including from
 4 their worldwide sales of infringing HDD products that are later imported, used, or
 5 sold by others in the U.S.

6 84. Defendants have had knowledge of or have been willfully blind to the
 7 '734 Patent and the infringing nature of the accused products since July or August
 8 2024 as discussed above or at least the filing of this Complaint. Despite this
 9 knowledge, Defendants have continued to make, use, offer for sale, sell and/or
 10 import the Accused Products knowing such products infringe the '734 Patent.
 11 Defendants' infringement of the '734 Patent is intentional, purposeful, and willful
 12 for the additional reason that Defendants know that their HDD products must
 13 infringe to compete in the United States, and therefore willfully infringe the
 14 '734 Patent in an attempt to maintain and/or grow their market share by continuing
 15 to design, market, and sell infringing HDDs. *See* Infringement Background.

16 85. The Accused Products satisfy all claim limitations of one or more
 17 claims of the '734 Patent. For example, the accused products infringe '734 Patent
 18 claim 1 for the same reasons as '997 Patent claim 1. *See* Count 2.

19 86. Defendants directly infringe, induce others to infringe, and contribute
 20 to the infringement by others of the '734 Patent under 35 U.S.C. § 271(a), (b), and
 21 (c) in this District and elsewhere.

22 87. Defendants' infringement has been and continues to be willful,
 23 permitting Plaintiff to seek enhanced damages under 35 U.S.C. § 284. Defendants
 24 have known, or been willfully blind to the fact, that making, using, offering to sell,
 25 selling, and importing the accused products constitutes infringement of the
 26 '734 Patent.

27 88. Plaintiff has complied with all requirements of 35 U.S.C. § 287 because
 28 it has not and does not make or sell any patented articles in the United States.

1 89. As a result of Defendants' infringement of the '734 Patent, Plaintiff is
2 entitled to monetary damages in an amount adequate to compensate for Defendants'
3 infringement, but in no event less than a reasonable royalty for the use made of the
4 invention by Defendants, together with interest and costs as fixed by the Court.

5 **JURY DEMAND**

6 90. Plaintiff demands a jury trial pursuant to Federal Rule of Civil
7 Procedure 38.

8 **RELIEF REQUESTED**

9 Plaintiff prays for the following relief:

10 A. A judgment in favor of Plaintiff that Defendants have infringed the
11 Asserted Patents, and that the Asserted Patents are valid and enforceable;

12 B. A judgment and order requiring Defendants to pay Plaintiff past and
13 future damages, costs, expenses, and pre- and post-judgment interest for its
14 infringement of the Asserted Patents, as provided under 35 U.S.C. § 284;

15 C. A judgment and order requiring Defendants to provide an accounting
16 and to pay supplemental damages to Plaintiff, including, without limitation, pre- and
17 post-judgment interest;

18 D. A judgment that Defendants' infringement is willful and enhanced
19 damages under 35 U.S.C. § 284;

20 E. A finding that this case is exceptional and an award of Plaintiff's
21 reasonable attorney fees and costs under 35 U.S.C. § 285; and

22 F. Any and all other relief to which Plaintiff may be entitled.

23
24
25 Dated: April 15, 2025

Respectfully submitted,

26
27 /s/Marc A. Fenster
28

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