

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

1LSS, INC.,
Patent Owner.

IPR2025-01180
Patent No. 11,864,641

PATENT OWNER'S RESPONSE

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EXHIBIT LIST

EXHIBIT NO.	DESCRIPTION
EX2001	U.S. Patent No. 9,800,283 (“Schmidt”)
EX2002	U.S. Pat. Publ. No. 2017/0196331 (“Gluck”)
EX2003	Report of Parties’ Planning Meeting Under F.R.C.P. 26 (f) [Doc. 43] in 1LSS Inc. v. Apple Inc., Case No. 24-cv-08769-SRM-JP
EX2004	Stipulated Protective Order [Doc. 49] in 1LSS Inc. v. Apple Inc., Case No. 24-cv-08769-SRM-JP
EX2005	U.S. Pat. Publ. No. 2018/0234126 (“Yeo”)
EX2006	U.S. Pat. Publ. No. 2014/0217135 (“Murphy”)
EX2007	U.S. Pat. Publ. No. 2012/0031937 (“Baker”)
EX2008	Order Granting, in Part, Defendant Apple Inc.’s Motion to Stay Pending IPR [Doc. 47].
EX2009	Declaration of R. Glenn Akhavein, P.E. in support of Patent Owner’s Response
EX2010	U.S. Pat. Publ. No. 2019/0198212 A1 (“Levy”)
EX2011	High Coercivity “HiCo” Low Coercivity “LoCo” Magnetic Stripe Cards – Advantidge Article
EX2012	Analysis of the Formation of Magnetic Transition in Digital Magnetic Recording System
EX2013	How To Shield The Magnetic Field Of Permanent Magnets HQ Magnet Article
EX2014	Radial Magnets Article - We Know Magnets - Breaking The Monopoly: Why Only China Can Produce Neodymium Magnets
EX2015	What’s The Difference Between a HiCo & LoCo Magnetic Stripe Card? IDW Article
EX2016	Q-Card Magnetic Stripe Custom Test Cards Q-Card Pamphlet
EX2017	Magnetic Shielding Materials K&J Magnetics Blog

EXHIBIT NO.	DESCRIPTION
EX2018	Magnetic Shielding Handbook Westinghouse
EX2019	Magnet Shear Force with Doors K&J Magnetism Blog
EX2020	Magnet Designer / Calculator Radial Magnets
EX2021	Deposition Transcript of Dr. Joseph Phinney
EX2022	How thick a soft iron can block the magnetism? Courage Magnet Article
EX2023	2018 Most Popular Smartphone Weight – Google Search
EX2024	Declaration of Mydul Ronny Islam in support of Patent Owner's Response
EX2025	Plaintiff's First Amended Complaint for Infringement of U.S. Patent No. 11,864,641 [Doc. 30]
EX2026	Soft Ferrite Magnet Strength Magnet Blog Article

I. INTRODUCTION

Petitioner has not demonstrated that Claims 1-11 of U.S. Patent No. 11,864,641 (the “641 Patent”) are unpatentable, and Patent Owner 1LSS, Inc. (“1LSS” or “PO”) respectfully submits that the Board should find the challenged claims are not unpatentable.

Petitioner's invalidity case rests on a fundamental and irreconcilable contradiction: it asks the Board to conclude simultaneously that a person of ordinary skill in the art would have combined powerful rare earth magnets with a credit card wallet without hesitation, *and* that the same skilled artisan would have immediately recognized the card corruption risk resulting from the combination was serious enough to require yet a further modification of the proposed combination. Those two positions cannot both be true. A person of ordinary skill would not have been motivated to make a combination that itself would render the combined device inoperable, absent further modifications. The only reason to do so is hindsight.

The contradiction is not the only fatal defect. Petitioner's proposed combinations of the folio wallets of Zhu and Kinshi with Goto's shielding fail at a basic level. Ferromagnetic shielding works only when the shield surrounds the protected space, closing every air path between the field source and the protected object. Petitioner's own expert confirmed this at deposition: permeable materials “can guide things away from the inner compartment *if you surround that*

compartment with permeable material.” Goto's sealed card-holding space does exactly that. Kinshi's and Zhu's open-topped pocket sleeves do not — and cannot, by design. In every relevant operating configuration, the magnetic stripe on a card stored in those open pockets protrudes above the pocket opening, through an unshielded air path, in direct proximity to the field source. Adding Goto's iron foil to the pocket walls cannot close that bypass path. A person of ordinary skill in the art would have understood this basic principle and would have had no motivation to apply Goto's shield in a folio wallet because it would not work.

The objective evidence confirms the nonobviousness. When 1LSS launched the MagBak Wallet in November 2018, there were no magnetically connected wallets for mobile devices on the market — not because the consumer demand was absent, but because the technical barrier was real and recognized. The card corruption problem that any skilled artisan would have identified as the threshold obstacle to making the claimed combination dissuaded any such attempts. The market validated inventive nature of the patented technology: the patented product's Kickstarter campaign was oversubscribed within three days. Apple, a company with vastly greater engineering resources than 1LSS, launched its own magnetic wallet two years later only after it had ordered the patented MagBak Wallets, studied them, and incorporated 1LSS's patented technology into its competing product. Apple now

asks this Board to find that the invention it studied and copied was obvious all along. The Board should find otherwise.

Because Petitioner has not demonstrated by a preponderance of the evidence that the challenged claims are unpatentable, the Board should find Claims 1–11 of the '641 Patent not unpatentable.

II. LEVEL OF ORDINARY SKILL IN THE ART

A person having ordinary skill in the art at the time of the claimed inventions (“PHOSITA”) would have had a bachelor's degree in mechanical or electrical engineering with two to three years of experience designing consumer electronics accessories or mobile device peripherals. EX2009, ¶37.

Two points about the PHOSITA are critical to the analysis that follows. First, a PHOSITA in this field is a consumer product engineer, not a research scientist. The PHOSITA is someone who designs physical objects that are assembled in volume, sold to price-sensitive consumers, and held to strict quality standards. That experience and context determines what motivations and what cost-benefit tradeoffs a PHOSITA would have considered in any proposed design modification. EX2009, ¶236. Second, Dr. Phinney's primary expertise is in electrical engineering — specifically coil design, RFID integrated circuits, and wireless power transfer. EX1003, ¶¶5-7, 10. His experience, as he describes it, consists principally of coupling between transmitter and receiver coils and similar electromagnetic

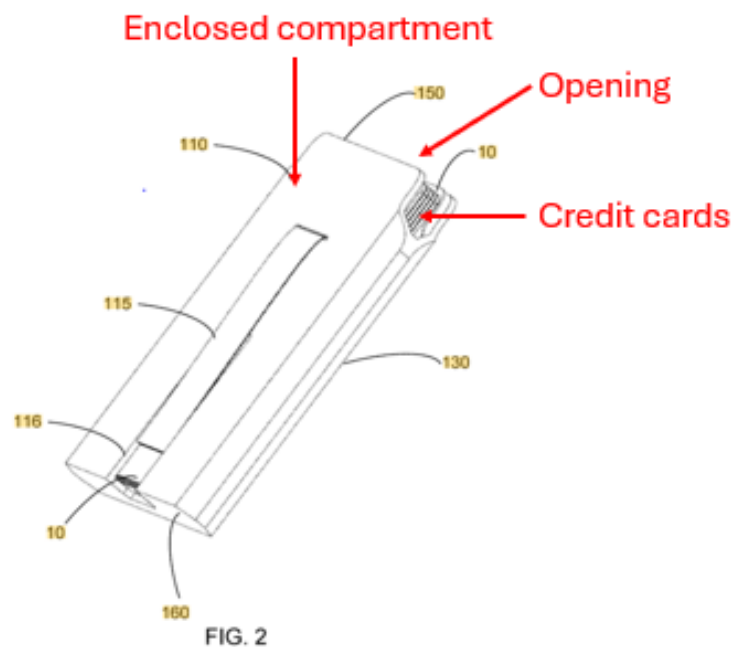
phenomena. *Id.* This background is lacks the requisite consumer product development and manufacturing experience that characterizes a PHOSITA in this art, a fact he confirmed in his deposition. EX2021, 10:17-11:19. As a consequence, the Board should give little, if any, weight regarding Dr. Phinney's opinions regarding whether a PHOSITA would have been motivated to combine the various teachings in the prior art to arrive at the claimed inventions.

III. CLAIM CONSTRUCTION

Claims are construed under the standard of *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc). Claim terms receive their ordinary and customary meaning as understood by a PHOSITA at the time of the invention in the context of the specification and prosecution history. Two terms warrant attention.

“Compartment” (All claims). The Board construed this term during prosecution as “a part or space marked or partitioned off.” EX1002, 455. The '641 Patent's specification is consistent with and informs this construction: the compartment is depicted throughout as a bounded, enclosed space for holding cards, with defined walls on all sides surrounding the card-holding interior. EX2009, ¶¶368-372; EX1001, FIGS. 1, 2 (shown below), 6, 7, 8A, 8B, 9, 10, 11, 12, 13C, 14A, 14B, 15A, 15B, 16A, 16B, 17A, 17B, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29, 30, 31, 32. No embodiment depicts or describes a compartment that exposes any portion of the face of any stored card when the wallet is attached to the mobile device.

EX2009, ¶372. The compartment's enclosed character is not incidental — it is a structural prerequisite for the claimed shield to meaningfully interpose between the magnetic arrangements and the compartment's contents. A PHOSITA would have understood that a shield can only interpose between a field source and a protected space if that protected space has a defined boundary on the side facing the field source. EX2009, ¶370.



The Board’s construction requires that the space be meaningfully “marked or partitioned off” from the surrounding structure. Those skilled in the art would have understood that a space that is “partitioned off” is one whose boundaries are defined by structural walls or surfaces that separate the interior space from the exterior on

all relevant sides, consistent with the claimed arrangement of a shield interposed between the compartment and the magnetic arrangements. EX2009, ¶373.

“Content Removal Slot” (Claim 2). The content removal slot is a structural element separate from and additional to the compartment that claim 1 already requires. EX2009, ¶¶380-385. The figures describe and depict the content removal slot as a specific structural feature that is distinct from the compartment and distinct from the opening through which the compartment is accessed for card insertion. EX2009, ¶381. The specification depicts it as a discrete feature defined by the wallet body that allows a user to contact and manipulate cards within an already-bounded compartment. EX2009, ¶381. Under the principle of claim differentiation, the dependent claim 2 must be narrower than claim 1, which already requires a body defining a compartment. The content removal slot must therefore be a distinct structural feature adding a meaningful limitation beyond the compartment itself. EX2009, ¶384.

IV. BACKGROUND

A. The '641 Patent

The '641 Patent claims a wallet for attachment to a mobile device. The wallet has a body defining a compartment — a bounded, enclosed space — for storing credit cards, cash, identification, and similar items. EX1001, 9:3-7; EX2009, ¶¶41-42. The specification explains that compartment is “formed between front portion

120, back portion 110, bottom portion 160, top portion 150, left portion 130 and right portion 140” — a fully enclosed space with defined walls on all sides. EX1001, 9:3-7. The wallet also incorporates a content removal slot that allows users to push or guide cards out of the enclosed compartment. EX1001, 8:57-62; EX2009, ¶43.

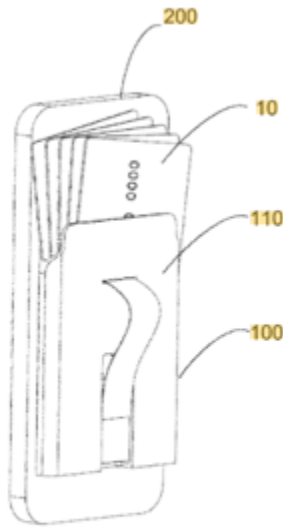


FIG. 14B

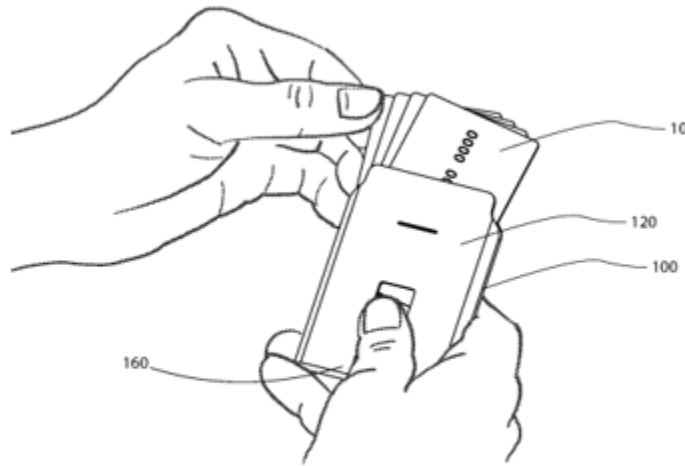


FIG. 9

The wallet carries a first arrangement of magnetic material with adjacent regions of alternating polarity exposed at the device side surface, and a second arrangement with the same alternating polarity configuration. EX1001, FIG. 16A; EX2009, ¶44. The two arrangements are physically separated by a region of nonmagnetic material whose maximum cross dimension exceeds the distance between any two immediately adjacent opposite polarity regions within either arrangement. EX1001, 21:1-7; EX2009, ¶47. This specific geometric relationship —

the gap separating the two arrangements is larger than the internal pole spacing of each — is what produces orientation-deterministic coupling: when the wallet is brought into proximity with complementary device-side magnets, the dual-arrangement geometry creates a unique energy minimum that drives the wallet into and holds it in a specific orientation. EX2024, ¶36; EX2009, ¶47. A single arrangement of alternating polarity magnets can resist a 180-degree flip, but cannot fully constrain the wallet's translational and rotational position in two dimensions the way the dual-arrangement claimed architecture does. *Id.*

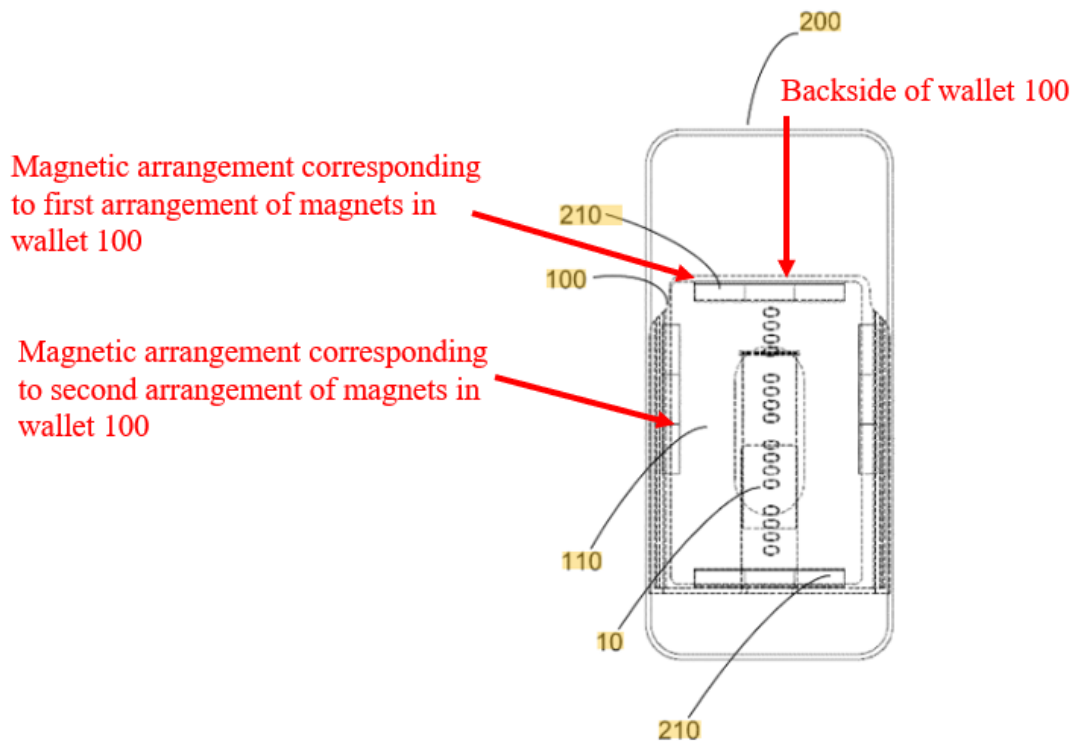
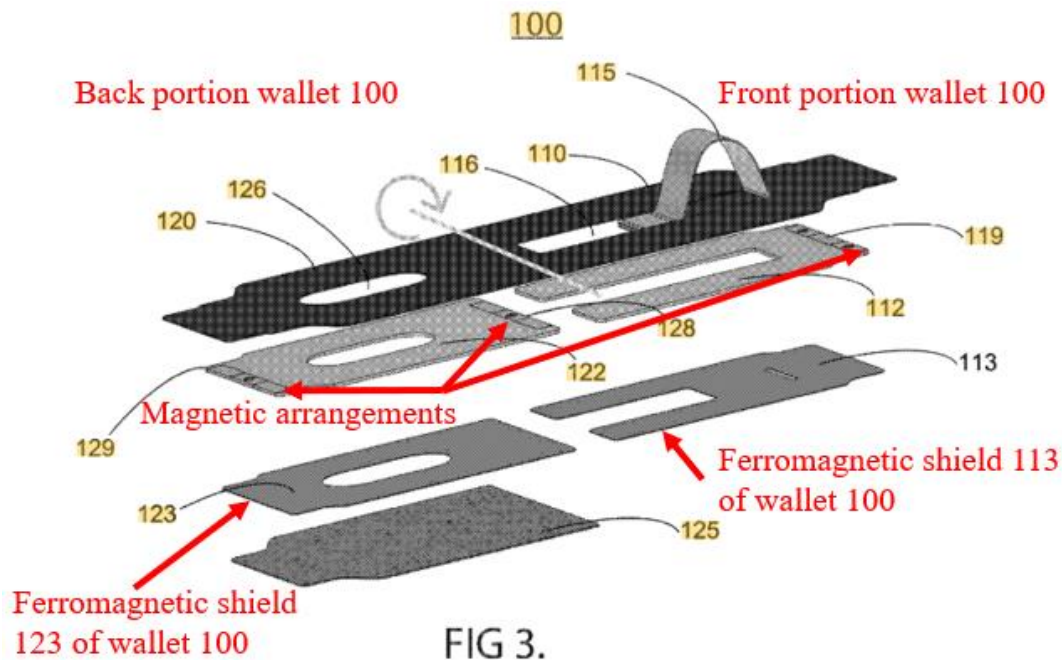


FIG. 16A

The wallet further includes a ferromagnetic shield or metallic plate positioned between the magnetic arrangements and the card compartment. EX1001, 8:11-14; EX2009, ¶48. The specification explains the importance of surrounding the protected objects with the shields: “Back shield 113 and front shield 123 protect magnetically sensitive credit cards from exposure to the magnetic fields created by back-side magnets 119, front-side bottom magnets 128, and front-side top magnets 129.” EX1001, 8:11-14; FIG. 3.



The specification specifies that the wallet's preferred magnets are “neodymium magnets of grade N48 and higher,” with “N52 and higher” more preferred. EX1001, 11:67-12:2. The claimed ferromagnetic shield (claims 1-4, 6-10) and metallic plate (claim 5) are not afterthoughts — these are the structural elements

that makes the use of strong rare earth magnets for orientation-deterministic coupling compatible with the wallet's primary function of safely carrying credit cards. EX2009, ¶259; EX2024, ¶36.

B. How Magnetic Stripes Work and How They Are Damaged

ISO 7811 specifies the location, dimensions, magnetic properties, and encoding format of magnetic stripes on magnetic cards. EX2009, ¶92. As shown below, the magnetic stripe is located on the reverse surface of the card beginning approximately 5mm from the top edge, with encoded data starting at approximately 7.5mm from the top edge. EX2009, ¶¶93-94, 107. Track 1 and Track 2 encode account numbers, cardholder names, and expiration dates in a format read by payment terminals. *Id.* ISO 7811-2 specifies low coercivity stripes at approximately 300 Oersteds (used for hotel keys, gift cards, and transit passes), while ISO 7811-6 specifies high coercivity stripes at approximately 2,750 Oersteds (used for credit and debit cards). *Id.*, ¶¶95-97.

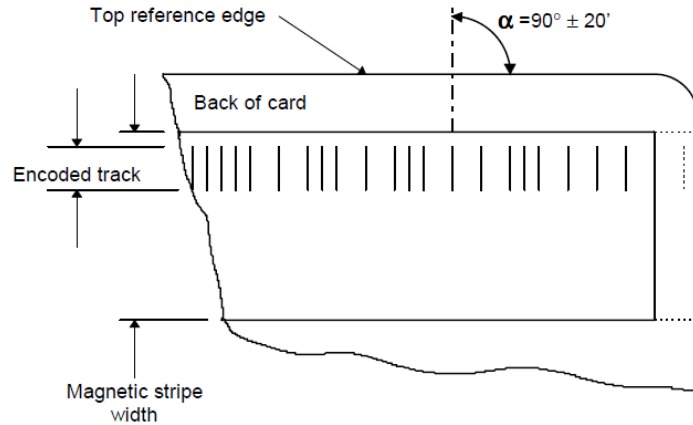


Figure 9 — Angle of recording

9.2 Nominal bit density

The nominal bit density for each of the tracks shall be:

for track 1	8.27 bits/mm (210 bpi),
for track 2	2.95 bits/mm (75 bpi),
for track 3	8.27 bits/mm (210 bpi).

As illustrated below, encoded data is stored as a spatial pattern of magnetic domains — discrete regions of ferromagnetic stripe material oriented in a specific direction, each representing binary data bits. EX2009, ¶¶98-99.

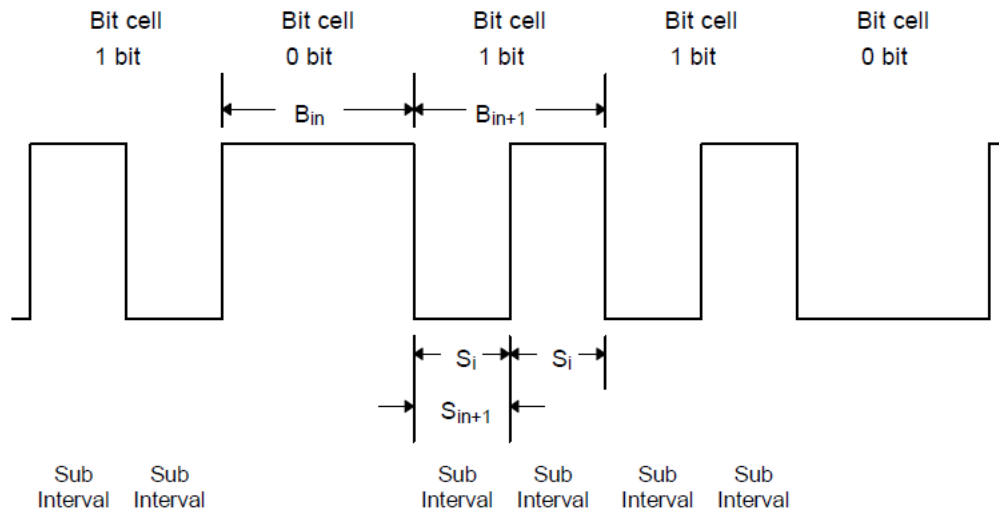


Figure 10 — Flux transition spacing variation

When the stripe is exposed to an external magnetic field of sufficient strength, that field reorients the ferromagnetic particles within the stripe material away from their encoded positions. EX2009, ¶¶101-103. The result is a card the payment terminal cannot read. The all-or-nothing character of magnetic stripe corruption is critical. The encoded data on each track forms a single continuous sequence of magnetic transitions that must be read correctly from start sentinel to end sentinel with a valid longitudinal redundancy check. EX2009, ¶104. If any portion of the stripe between those sentinels has been corrupted — even a single bit transition — the card reader's error detection logic flags the data as invalid and rejects the card. *Id.* As Patent Owner's expert explained: "A credit card with a partially corrupted magnetic stripe is not a partially functional credit card. It is a non-functional credit card, because the payment system cannot reconstruct valid account data from a stripe with any corruption in the data field." EX2009, ¶105. An apt analogy is a password where getting a single character wrong defeats the entire entry regardless of how many characters are correct. EX2009, ¶102. The practical consequence for any proposed shielding arrangement is unforgiving: a shielding arrangement that leaves any portion of the stripe exposed to a magnetic field exceeding the damage threshold provides zero net protection to the card's functionality — not reduced protection, not imperfect protection, but no protection at all. EX2009, ¶106.

Importantly, Petitioner’s expert acknowledged that degradation of magnetic stripe data “doesn’t just involve that type of coercive force . . . it can occur at lower magnetizations especially DC magnetizations,” such as those caused by magnets. EX2021, 46:14-47:4. He further acknowledged that a PHOSITA would have recognized this card corruption problem as “notorious” and long-standing, known since at least 1984. *Id.*, 29:14-22; EX1003, ¶70 (“the problem of magnets being located near magnetic cards and corrupting the information on those cards was notoriously well known before the ’641 patent.”). As explained below, these admissions foreclose any argument that the card corruption consequence of combining Baca’s powerful magnets with Berkley’s wallet would have been unforeseen to a PHOSITA.

Patent Owner’s expert, Mr. Akhavein, confirmed the analysis using actual, commercially available magnetic cards. A gift card inserted into a Kinshi-style folio case and slid in and out of the pocket a few times in the normal manner — precisely how a user would access cards during daily use — was rendered completely non-functional. EX2009, ¶¶346-352. A separate card was completely demagnetized by exposure to a single grade N42 neodymium magnet at wallet-proximity distances — and that magnet was weaker than the N48 minimum Baca teaches, let alone the N52 preferred grade. EX2009, ¶¶353-357. These are not surprising results. They are exactly what a PHOSITA familiar with both magnetic stripe technology and

permanent magnets would have predicted and known at the time of the claimed inventions. EX2009, ¶¶358-363.

C. How Ferromagnetic Shielding Works —Physical Prerequisites

Ferromagnetic shielding operates through magnetic reluctance — the magnetic analog of electrical resistance. Magnetic flux distributes itself preferentially through paths of low reluctance. Ferromagnetic materials such as iron and mu-metal have magnetic permeability hundreds to hundreds of thousands of times greater than air, presenting a dramatically lower-reluctance path. A ferromagnetic shield interposed between a field source and a protected object draws flux through the shield material and away from the protected space, reducing field strength behind the shield. EX2009, ¶¶114-115.

The physical prerequisite that governs the effectiveness of any shielding arrangement — and that is central to the analysis of both the Berkley-Baca grounds and the Zhu-Kinshi grounds — is this: the mechanism works only if the shield fully interposes between the field source and the protected object with no alternative air path or bypass route around the shield. EX2009, ¶116. This is not a technical qualification or a matter of degree. It is a fundamental physical principle.

Dr. Phinney himself confirmed this principle at deposition, explaining that permeable materials “provide a preferential path for magnetic flux” and “can guide things away from the inner compartment *if you surround that compartment with*

permeable material.” EX2021, 56:13-57:5 (emphasis added); EX2009, ¶117. He also acknowledged that magnetic flux can take many different paths and that “even where permeable magnetic circuit is provided, there still can be leakage flux and other types of fringing fields . . . especially in the case where if you had two magnetic regions that are separated, generally speaking, between them, there will be a magnetic – magnetic fields in really all the space around these that is taking a path from one magnet to the other through space.” EX2021, 76:10-77:2; EX2009, ¶117.

The consequence is straightforward: a planar shield that does not completely cover the protected object cannot redirect field lines that reach the target via paths circumventing the shield. Field lines from a source positioned near an open edge of a planar shield can arc around the shield and reach the protected object without ever passing through the shield material, experiencing the full field strength of the source with no attenuation from the shield. EX2009, ¶¶118-120. Goto's own specification confirms this: it works because front wall 72 and rear wall 74 are “fused together by heat along the peripheral portion” to form a “sealed card containing space 78” — a fully enclosed geometry with no bypass path. EX1012, 12:15-18; EX2009, ¶¶195-197.

An additional consideration is magnetic saturation. If the shielding material reaches its saturation flux density, it loses its permeability advantage and begins to act like air, allowing the field to pass directly through. EX2009, ¶121. A thin foil of

shielding material adequate to address weak magnets may saturate catastrophically when exposed to the high-flux fields produced by the N48+ rare earth magnets Baca specifies, resulting in near-total shield failure. EX2009, ¶122. Material selection for effective shielding against Baca's arrays is therefore a non-trivial engineering task requiring specific knowledge of the candidate material's saturation flux density characteristics relative to the source field — not a routine design choice. EX2009, ¶¶123-124, 218.

D. Mechanical Alignment Systems

Before the priority date, mechanical alignment systems for mounting a wallet to personal electronic devices in a specific orientation were well-known. Levy's U.S. Patent Application Publication No. 2019/0198212, titled “Personal Electronic Device Case and Mounting System,” discloses a mounting assembly with a shaped protrusion on the mount and a complementary shaped recess on the device case — a male/female keying arrangement that physically constrains the case's position and orientation. EX2009, ¶¶126-128. The protrusion incorporates alignment and anti-rotation tabs that engage cut-outs in the recess, preventing both translational and rotational movement. EX2009, ¶128.

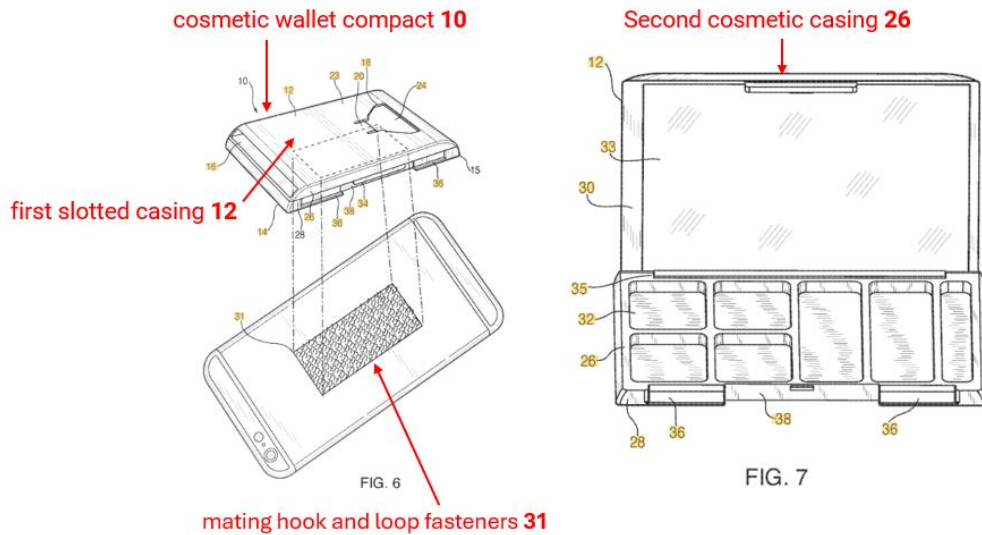
In Levy's system, the magnets provide only pull-off resistance — the force holding the case against the mount face — while the mechanical protrusion-and-recess system provides all orientation control. EX2009, ¶¶129-130. The Board

confirmed this during prosecution: “Levy's protuberances and recesses, not the magnets, cause the orientation of the electronic device in mount 106.” EX1002, at 443; EX2009, ¶131. Because Levy's mechanical system handles orientation, Levy's magnets need only provide modest compressive force — no rare earth grade required, no minimum field strength specified, and in some embodiments a ferrous mount surface without any mount-side magnets at all suffices. EX2009, ¶¶132-134. Those skilled in the art would have understood that Levy's mechanical keying features are incorporated into the mold during manufacture, adding approximately zero marginal cost per unit once the mold is made. EX2009, ¶¶135, 284.

E. Petitioner's Prior Art References

1. Berkley (U.S. Publication No. 2017/0354229)

Berkley discloses a combined cosmetic compact and wallet accessory designed to attach to the back of a smartphone. Berkley's specification states the invention is “a cosmetic wallet compact that accommodates credit cards, identification cards and cosmetics for effective and easy access by users.” EX1013, ¶2. The first casing is “adapted and sized to accommodate a combination of at least two to four credit card(s), identification card(s), and one or more folded paper bills.” *Id.*, ¶23. This is the core function of the device, not an incidental feature — every design choice in Berkley is organized around safe and convenient card carrying. *Id.*, ¶¶137, 203.



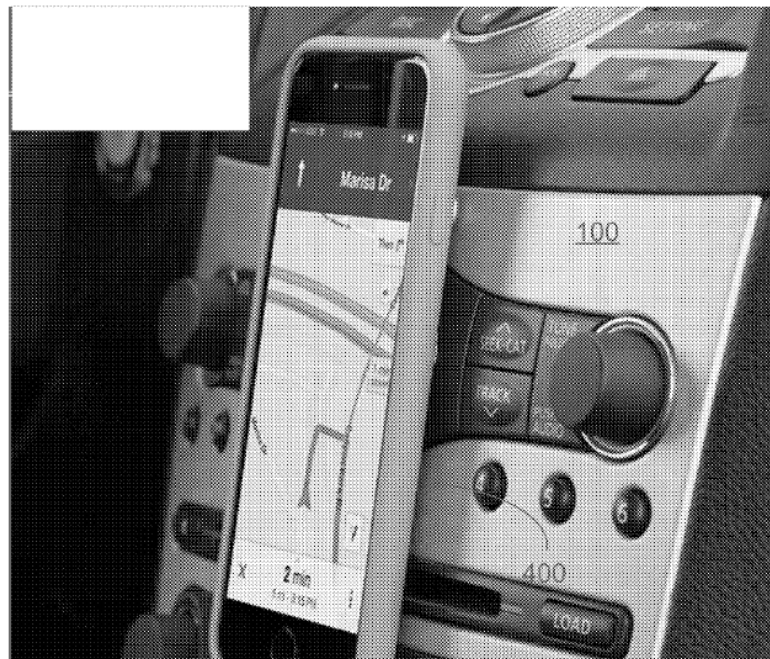
Berkley attaches to the phone by a single set of mating hook and loop fastener strips measuring approximately $60\text{mm} \times 19\text{mm}$, or alternatively by micro suction tape, strong hold adhesive tape, or a magnet placed on the base of the compact, which enables it to adhere to corresponding magnets attached to the smartphone by the user. EX1013, ¶29. Berkley specifies no magnet grade, no minimum field strength, and no magnetic material for the alternative magnet attachment — describing it only in functional terms as enabling the compact to “stick” to corresponding phone-side magnets. EX2009, ¶¶140-141. There is no disclosure of alternating polarity arrays, self-alignment function, or any specific orientation requirement. EX2009, ¶141.

As explained below, those skilled in the art would have understood that a ferrite magnet consistent with Berkley's single attachment magnet produces approximately 180 Gauss at 2mm and 100 Gauss at 3mm — well below the damage threshold for even low coercivity magnetic stripe cards. EX2009, ¶¶208-212. As a

consequence, Berkley's existing magnet does not create the card corruption problem that Baca's N48+ magnetic arrays do. EX2009, ¶212.

2. Baca (U.S. Publication No. 2016/0260532)

Baca discloses a magnetic mounting system for attaching electronic display devices to stationary or semi-stationary surfaces such as automobile dashboards, walls, and computer monitor bezels. EX1006, ¶¶3-4; EX2009, ¶142. Baca contains no disclosure of a wallet, card holder, or any accessory designed to carry credit cards. The word “wallet” does not appear anywhere in Baca's specification. EX2009, ¶144. As illustrated below, Baca's problem — holding a phone against gravity and vehicular vibration on a dashboard — is categorically different from Berkley's problem of safely carrying cards on the back of a phone during daily use. EX2009, ¶¶143-145; EX1006, FIG. 16 (shown below).



Baca's specification treats the use of high-grade rare earth magnets not as a preferred option but as a requirement: “Magnets 200 and magnets 500 are preferably made out of rare earth metals including alloys of neodymium or samarium-cobalt. Neodymium magnets of grade N48 and higher are preferred, and neodymium magnets of grade N52 and higher are more preferred.” EX1006, ¶80. Both experts agree that Baca expressly discloses only rare earth magnets of N48 as minimum and N52 as more preferred. EX2021, 38:5-22, EX2009, ¶153. Petitioner’s expert further confirmed that his analysis relies only on those magnet embodiments. *Id.*, 38:5-22.

Those skilled in the art would have understood that Baca’s N48 minimum grade specification is not arbitrary. Baca explains that holding a phone on an automobile dashboard against gravity and vehicular vibration forces requires the high maximum energy product that only rare earth magnets of grade N48 or higher reliably provide. EX1006, ¶¶79-80; EX2009, ¶¶154-155.

Baca also explicitly acknowledges that rare earth magnets are expensive and teaches how to minimize their use by substituting ferrous inserts: “Ferrous inserts can also be used in surface-side attachments 110 to reduce product costs. Rare earth magnets 200 tend to be expensive.” EX1006, ¶85; EX2024, ¶¶37-40. Both experts agreed that this was well known. EX2009, ¶¶158-160; EX2021, 16:23-17:2 (rare earth magnets are “often more expensive.”). This teaching expressly directs cost reduction toward the surface-side attachment — which in Petitioner's proposed

combination is the analog of the wallet side of the claimed invention. EX2009, ¶161. Baca itself, in other words, teaches away from loading the wallet-side component with full rare earth arrays. *Id.*

Those skilled in the art also would have understood that working with N48-N52 neodymium magnets in production is also a substantial manufacturing undertaking. EX2009, ¶¶162-164. These magnets cannot be separated by hand in volume; they must be slid apart using specialized machinery costing \$30,000-\$45,000. EX2009, ¶¶165-166; EX2024, ¶41. They cannot be handled with ferromagnetic tooling because the magnets attract to it; non-ferrous alternatives are required throughout the assembly process. EX2009, ¶¶167, 249. These magnets would be extremely difficult and expensive to attempt to sew into soft goods such as Berkley's wallet or the Zhu and Kinshi folio wallets. Attempting to maintain their orientation and spacing while keeping them from snapping onto each other is not a trivial task. EX2024, ¶41; EX2009, ¶168. A PHOSITA, who has consumer product development experience, would have understood all of these costs and risks before committing to a design incorporating such magnets. EX2009, ¶¶236-238.

3. Zhu (Chinese Patent Application No. 108023992A)

Zhu discloses a folio-style mobile phone case assembly with a back plate incorporating magnet groups at the corners and a panel that functions as a cover or front flap. EX1008, Abstract; EX2009, ¶171.

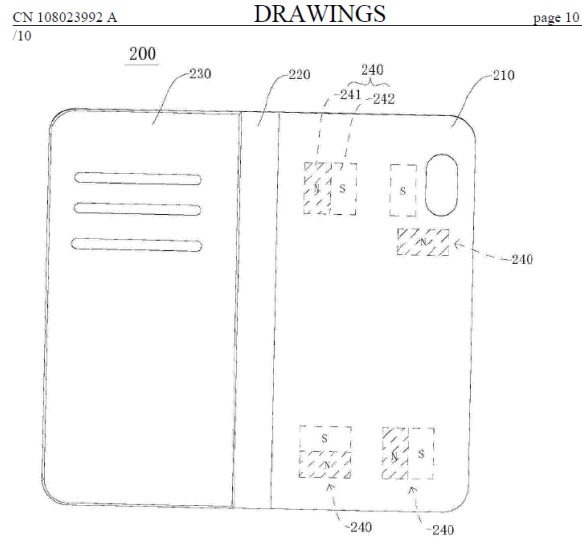


Fig. 4

As shown above, Zhu discloses a panel 230 that functions as the cover or front flap of the folio case — the component that folds over the front face of the phone when the case is closed. EX1008, ¶30; EX2009, ¶¶172-173. Panel 230 is the component that, in Petitioner's theory of the case, corresponds to the wallet body of the claimed invention. Back plate 210 is configured to magnetically couple to mobile phone case 100 (not shown) through the interaction of complementary magnetic arrangements on the panel and case surfaces, allowing the phone case to be held to panel 210. EX1008, ¶30; EX2009, ¶173. As shown, Zhu's panel 230 depicts three elongated ovals in the figures, but that Zhu's disclosure is entirely silent as to the identity or function of those elongated ovals. EX2009, ¶¶174-175. Dr. Phinney acknowledged in his declaration and testimony that Zhu's panel 230 depicts three

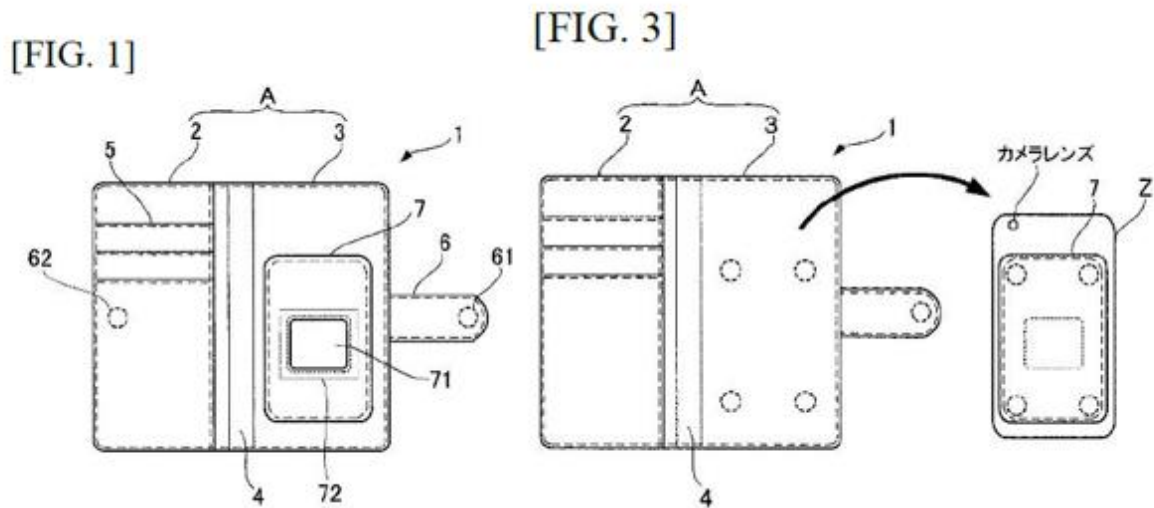
elongated ovals but that Zhu's disclosure is “simply silent” with respect to the identity or function of those ovals. EX1003, ¶121; EX2021, 71:23-72:9; EX2009, ¶368. He offers no explanation of what those features are, what purpose they serve, or what structural character they have. EX2009, ¶174. As explained below, this concession is fatal to Petitioner's reliance on Zhu for the compartment and content removal slot claim elements.

Zhu also discloses no compartment as that term is used in the '641 Patent — no bounded interior cavity, no card pockets with defined retaining walls, no mechanism for containing cards within a defined enclosed space. EX2009, ¶175. Zhu discloses no ferromagnetic shield or card protection mechanism. EX2009, ¶178. Zhu does not specify the grade, type, or field strength of its magnets and makes no reference to rare earth magnets. EX2009, ¶179. Dr. Phinney agreed that Zhu did not disclose any risk of corruption from a magnet. EX2021, 64:5-8; EX2009, ¶180.

4. Kinshi (Japanese Patent Application No. 2015-4401)

Like Zhu, Kinshi discloses a folio-style mobile phone case assembly comprising three primary structural components: base piece 3 (with magnets for holding the mobile phone via holding panel 7), cover piece 2 (with open-topped sleeves), and a connecting spine. EX1010, FIGS. 1, 3 (shown below); EX2009, ¶¶183-184. Kinshi's card storage functionality (cover piece 2) and its magnetic

attachment functionality (base piece 3) are on two separate structural components of the folio assembly. EX1010, FIG. 3; EX2009, ¶188.



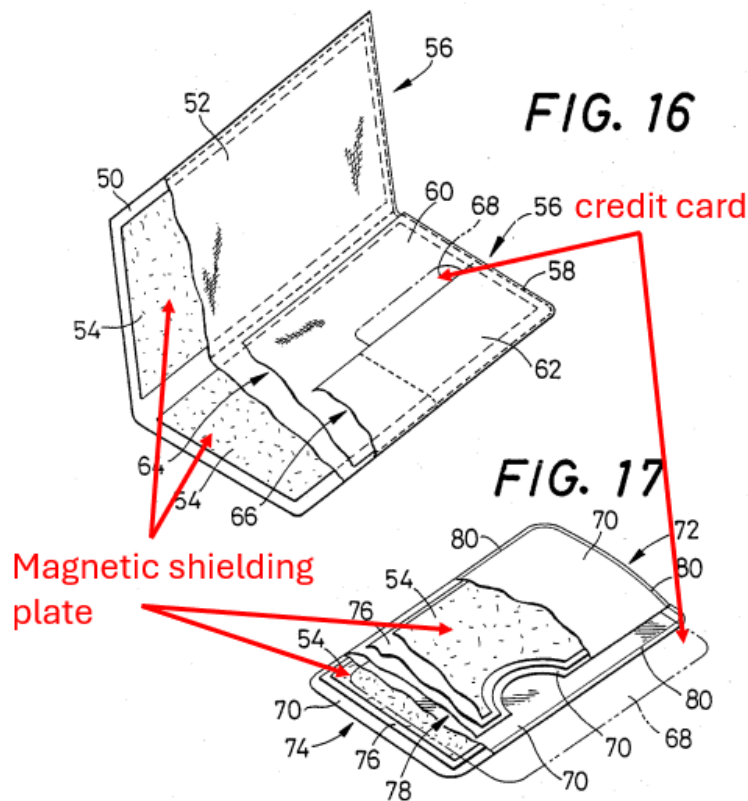
Kinshi's pockets 5 are open-topped sleeves. Kinshi states: “openings of the pockets 5 are formed in a direction along the horizontal direction in FIG. 1 to allow cards to be slid in and out in the vertical direction.” EX1010, ¶15. This is a designed functional feature whose purpose is to enable vertical card insertion and removal. EX2009, ¶186. Cards inserted in Kinshi's pockets protrude above the pocket openings — retrained by the sleeve walls below, exposed above. EX2009, ¶186. The portion that protrudes includes the magnetic stripe, which begins approximately 5mm from the top of the card. EX2009, ¶¶304-306.

Like Zhu, Kinshi does not specify the grade, type, or field strength of its magnets 81 and makes no reference to rare earth magnets. EX2009, ¶185. Kinshi discloses no ferromagnetic shield or card protection mechanism. *Id.*, ¶191. Kinshi

also does not disclose any risk of magnetic card corruption caused by its magnets. EX2009, ¶185. As such, a PHOSITA would understand it to mean that Kinshi's unspecified magnets are of sufficiently low grade that their fields do not approach credit card damage thresholds at the distances involved in Kinshi's folio architecture, or that Kinshi's structural separation of magnets and card pockets prevents the issue from arising. EX2009, ¶191.

5. Goto (U.S. Patent No. 4,647,714)

Goto, filed in 1984, discloses a card holder incorporating magnetic shielding designed to protect magnetically sensitive cards from corruption by external magnetic fields. EX1012, 2:14-21; EX2009, ¶¶193-194. As illustrated below, Goto's shielding works by building front wall 72 and rear wall 74 each from composite layers incorporating iron foil magnetic shielding plate 54, and fusing those walls together “along the peripheral portion” to form “a sealed card containing space 78.” EX1012, 12:11-18; EX2009, ¶195.



Goto explicitly discloses that the card “accommodated in this magnetic-card protection case shown in FIG. 17 is also similarly protected, since the card containing space 78 is due to the magnetic shielding plate 54 in the front wall 72 and that of the rear wall 74” — and that “[e]ven when the magnetic-card protection case is exposed to magnetic force line, the card can not be affected.” EX1012, 12:20-27; EX2009, ¶196.

The shielding in Goto works precisely and only because the card is fully enclosed — surrounded on all faces by the composite walls with their shielding plates, with no bypass air path from any external field source to the card. EX2009,

¶197. Dr. Phinney himself explained this: permeable materials “can guide things away from the inner compartment *if you surround that compartment with permeable material.*” EX2021, 56:13-57:5 (emphasis added). As explained below, Goto's design surrounds the compartment while Kinshi's and Zhu's open-topped sleeves do not—a critical distinction that would have dissuaded a PHOSITA from applying Goto's teaching to the folios of Zhu or Kinshi. EX2009, ¶197.

**V. PETITIONER FAILS TO DEMONSTRATE THAT THE
CHALLENGED CLAIMS ARE UNPATENTABLE**

To establish obviousness, Petitioner must show by a preponderance of the evidence that a PHOSITA would have had reason to combine the references in the way claimed, with a reasonable expectation of success. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). When an obviousness ground is based on a combination of prior art references, “a patent ... is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. It is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.* The rationale must be more than “mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006); see *In re Nuvasive, Inc.*, 842 F.3d 1376, 1382-85 (Fed.

Cir. 2016) (vacating PTAB’s finding of obviousness because the PTAB “did not make adequately explained findings as to why a PHOSITA would have been motivated to combine the prior art references” and “relied on only one conclusory statement by [the petitioner’s] expert”). “A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” *KSR*, 550 U.S. at 421. Where, as here, a proposed combination that would cause a device to fail at its primary purpose, would discourage a PHOSITA from following the combination's path. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009). Here, a skilled artisan would not have been motivated to try any of Petitioner’s proposed combinations because (i) Baca’s teachings of using powerful, rare earth magnets is incompatible with the magnetic card carrying wallet of Berkley and (ii) the teachings of Goto cannot be applied to the folios of Zhu and Kinshi because of the structural limitations of their folio wallets.

A. A PHOSITA Would Not Have Been Motivated to Combine Baca's Rare Earth Magnetic Arrays with Berkley's Wallet

The Berkley-Baca combination fails because a PHOSITA would have known about the “notorious” problem of magnets corrupting magnetic cards and would not have been motivated to add the powerful magnetic arrays taught by Baca to Berkley’s wallet, which is designed to carry magnetic cards that would readily be

corrupted by the proposed addition of magnetic arrays. To the contrary, this combination not only would not have been obvious to a PHOSITA, but they would have been dissuaded from such a combination given this widely known problem.

1. Applying Baca's Rare Earth Arrays to Berkley's Wallet Destroys Berkley's Primary Function — A Consequence a PHOSITA Would Foresee Before Making the Combination

Berkley's wallet addressed the need for “a cosmetic wallet compact that selectively attaches to and detaches from the back surface of a handheld device, such as a smartphone.” EX1013, ¶5. Every structural feature of Berkley's first casing — the receiving slot, the retaining press, the ejection guide aperture, the interior cavity dimensioned to standard credit card specifications — serves the single purpose of safely and conveniently carrying magnetic cards. *Id.*, ¶¶6, 7; EX2009, ¶203. Baca, on the other hand, addressed the need for a strong, removable attachment for a personal electronic device to stationary or semi-stationary surfaces such as automobile dashboards, walls, and computer monitor bezels. EX1006, ¶¶3-4. Baca explains that holding a phone on an automobile dashboard against gravity and vehicular vibration forces requires the high maximum energy product that only rare earth magnets of grade N48 or higher reliably provide. EX1006, ¶¶79-80. Thus, Berkley and Baca address two very different problems and a PHOSITA would have no reason to combine their teaching, other than in hindsight. *Palo Alto Networks, Inc. v. Finjan, Inc.*, IPR2016-00165, Paper 7 at 17-18 (Apr. 21, 2016) (no motivation

to combine two references where the second reference “addresses a different problem” than the first).

Even more problematic, the combination would result in rendering Berkley’s wallet inoperative for its intended use of a wallet for carrying credit cards. A modification of Berkley that compromises the integrity of those cards does not merely degrade performance at the margins. It eliminates the primary reason the device exists and renders the modified device commercially unacceptable for its intended purpose. EX2009, ¶203. As explained above, magnetic stripes on cards of the kind Berkley is designed to hold encode information through the orientation of ferromagnetic particles embedded in the stripe material during the card encoding process. EX2009, ¶204. The encoded data is stored as a specific pattern of magnetic particle orientations that is read by a card reader's magnetic head when the card is swiped or inserted. Exposure of the magnetic stripe to a sufficiently strong external magnetic field disrupts this encoded pattern by reorienting the ferromagnetic particles, corrupting the stored data and rendering the card unreadable or non-functional. EX2009, ¶204. The field strength at or above which magnetic stripe corruption occurs under typical exposure conditions ranges from 300 gauss for hotel key, gift cards or transit passes to 2750 gauss for debit and credit cards. *Id.*

Those skilled in the art would have known that Baca's N48+ neodymium rare earth magnets produce surface fields of approximately 4,000 to 6,500 Gauss.

EX2009, ¶205; EX2017. Even a single N48 magnet of the size Baca discloses produces over 700 Gauss at 2mm and approximately 400 Gauss at 3mm from the magnet face. EX2009, ¶206. When two arrays of the type Baca teaches are applied to the device-side surface of Berkley's wallet, the cumulative magnetic field at the distances separating the device-side surface from the card compartment interior exceeds 4,000 Gauss — well above the 2,750 Oersted threshold for high coercivity credit card stripes and many multiples of the 300 Oersted threshold for low coercivity cards such as hotel keys and transit passes. *Id.*, ¶207. The result is that the proposed Berkley-Baca combination would corrupt every magnetic card stored in Berkley's wallet. *Id.*

Those skilled in the art would have understood that this was a predictable and foreseeable result of implementing Baca's specific magnetic arrays in Berkley's magnetic card holding wallet. EX2009, ¶207. Dr. Phinney himself acknowledged that a PHOSITA would have recognized this card corruption problem as “notorious” and long-standing, known since at least 1984. EX1003, ¶¶70-80; EX2021, 29:14-22. As such, a PHOSITA would have understood the consequences flowing from Baca's disclosure of using rare earth magnetic array on Berkley's stored cards would have been unlikely to produce the result sought and, as a result, would have been affirmatively discouraged from making such a combination upon recognizing this consequence.” EX2009, ¶214; *see Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600

F. Appx. 755, 758-59 (Fed. Cir. 2015) (“We agree with ... the Board’s definition of Fukuta’s ‘principal of operation’ and the Board’s finding that combining Fukuta and Morris would fundamentally alter that ‘principal of operation.’... Such a change in a references ‘principal of operation’ is unlikely to motivate a person of ordinary skill to pursue a combination with that reference”); *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009) (“An inference of nonobviousness is especially strong where the prior art’s teachings undermine the very reason being proffered as to why a person of ordinary skill would have combined the known elements”); *Keurig Green Mountain, Inc. v. Touch Coffee & Beverages, LLC*, IPR2016-01394, Paper 10 at 16 (Jan. 4, 2017) (“[T]he proposed combination renders Castellani unsatisfactory for its intended purpose, which eliminates any reason to modify Castellani using the teachings of Yoakim.”); *Shaw Indus. Grp., Inc. v. Automated Creel Sys. Inc.*, IPR2013-00132, Paper 42 at 27-28 (Jul. 24, 2014) (no motivation to combine where one piece of prior art discouraged the teachings relied on in other prior art and the petitioner failed to “show[] that a skilled artisan would have disregarded that inconsistency in assessing the references”); MPEP §2143.01 (V) (If the “proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.”), *citing In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984).

Petitioner's own evidence confirms this teaching away effect and in doing so exposes a fatal internal inconsistency in Petitioner's theory. Petitioner introduced technical literature on magnetic field damage to credit card stripes to support the argument that adding Goto's ferromagnetic shield to the Berkley-Baca combination would have been obvious because a PHOSITA would recognize the need to protect cards from Baca's fields. EX1003, Section VI.C. But that same technical literature simultaneously establishes that a PHOSITA would have recognized the card corruption risk *before* making the Berkley-Baca combination in the first place. EX2009, ¶215. A PHOSITA who would have known, as Petitioner's own evidence establishes they would have, that Baca's rare earth magnetic arrays produce fields sufficient to corrupt credit card magnetic stripes that would have discouraged, not motivated, them from combining Baca's arrays with Berkley's credit card wallet. *Id.*

DePuy Synthes Sales, Inc. v. Acantha LLC, IPR2016-00334, Paper 13 (June 6, 2016) is instructive. There, the Board noted two features that the primary reference, Errico, sought to provide. *Id.* at 15-16. Because “[m]odifying Errico as Petitioner proposes would destroy at least one of these features,” the Board found that “Petitioner has not presented sufficient reasoning why a person of ordinary skill in the art would have made the proposed combination.” *Id.* at 16. Similarly, here, combining Baca with Berkley in the matter suggested by Petitioner would undermine Berkley’s primary objective of providing “a cosmetic wallet compact that

accommodates credit cards, identification cards and cosmetics for effective and easy access by users.” EX1013, ¶2. Accordingly, a PHOSITA would not have been motivated to combine Baca with Berkley.

Petitioner's internally inconsistent obviousness theory cannot be cured by relying on prior art magnetic shields. Petitioner relies on the same body of prior art knowledge — specifically the well-documented sensitivity of credit card magnetic stripes to magnetic fields — to support two positions that cannot simultaneously be true. First, Petitioner argues that a PHOSITA would have been motivated to combine Berkley and Baca without hesitation, treating the card corruption risk as an obstacle that does not deter the combination. Second, Petitioner argues that a PHOSITA reading Goto would recognize the card corruption risk and be motivated to add Goto's shield to the Berkley-Baca combination, treating the same card corruption risk as a recognized problem requiring an engineering solution.

These positions are logically incompatible in a way that goes beyond mere tension. If the card corruption risk is serious enough to motivate a PHOSITA to add Goto's shield — as Petitioner's second position requires — then it is serious enough to be recognized before the combination is attempted. A PHOSITA who recognizes the card corruption risk seriously enough to add a ferromagnetic shield would not have had any reason to proceed with the combination in the first instance. EX2009, ¶¶215, 243; *Plas-Pak Indus., Inc.*, 600 F. Appx. at 758-59; *DePuy Spine*, 567 F.3d at

1326; *Keurig Green Mountain*, IPR2016-01394, Paper 10 at 16; *Shaw Indus.*, IPR2013-00132, Paper 42 at 27-28.

2. Solving the Card Corruption Problem Baca's Arrays Create Requires Adding a Ferromagnetic Shield — An Engineering Undertaking That Is Non-Trivial, Costly, and Fatal to Any Motivation to Combine

Even if a PHOSITA would have considered the complete set of applying the teachings of Berkley + Baca + Goto simultaneously, as explained below, the extensive modifications necessary to apply these disparate teachings would not have been obvious because of the expense, complexity, and reduced functionality, particularly when compared to alternatives such as mechanical systems like Levy's (discussed below). As such, Petitioner's proposed combination is based entirely on trying to assemble the claimed invention in hindsight while ignoring the many adverse considerations that would have dissuaded a PHOSITA from pursuing the proposed combination.

On the cost side of the analysis, a PHOSITA would have understood that Baca's magnetic array of neodymium magnets is more than 100 times more expensive than what Berkley taught with the hook and loop fastener. EX2009, ¶¶266-267 (\$0.05 versus \$7.00). Even Berkley's alternative single-magnet attachment, which Berkley describes only as enabling the compact to "stick" to the phone, is approximately a few cents per unit, which is significantly less expensive

than Baca's arrays. EX2009, ¶263. Baca itself teaches those skilled in the art to limit the use of the disclosed rare earth magnets to reduce cost given that they “tend to be expensive.” EX1006, ¶¶85-86; EX2009, ¶¶269-271; *see also* EX2021, 16:23-17:2 (Dr. Phinney agreeing that rare earth magnets are “often more expensive.”).

Second, incorporation of an effective ferromagnetic shield adds significant material cost. Effective shielding against Baca's N48+ arrays is not a matter of dropping any iron foil, such as disclosed in Goto, into the wallet. High-permeability alloys such as mu-metal — needed to handle the high flux densities Baca's N48+ arrays produce without saturating — carry substantially higher material costs per unit area than the polymer, fabric, or cardboard materials used in Berkley's existing wallet construction. EX2009, ¶227. Even silicon steel or grain-oriented electrical steel, which represent lower-cost alternatives to mu-metal, carry non-trivial material costs for a consumer product where material cost per unit is a primary design constraint. *Id.* The shield must be: (a) a material with both high permeability and sufficient saturation flux density to avoid saturation when exposed to Baca's arrays at close proximity; (b) sized and positioned to cover the full area of the card compartment including the full length of every stored card's magnetic stripe in every loading configuration with no bypass air path; and (c) integrated into Berkley's existing layered construction without unacceptably increasing overall thickness — a challenge given Berkley's explicit design goal of adding “minimal bulk” and its

specified overall dimensions of approximately 10.5 mm total thickness. EX2009, ¶¶218-221; EX1013, ¶25. Dr. Phinney agreed that adding a shield layer could increase the thickness and weight of the wallet and add cost and complexity. EX2021, 58:22-60:9; EX2009, ¶¶216-221. Such additional cost and complexity would further negate any motivation a PHOSITA would have to apply Baca's teachings to the wallet of Berkley. EX2009, ¶216.

Third, working with N48-N52 neodymium magnets in production requires specialized, purpose-built handling equipment and assembly jigs not required for Berkley's existing attachment mechanisms. Custom assembly jigs costing \$30,000-\$45,000 are needed to separate magnets in volume. EX2009, ¶166. Ferromagnetic tooling cannot be used in proximity to the magnets. EX2009, ¶253; *see also* EX2024, ¶41 (1LSS's difficulty working with rare earth magnets). A PHOSITA evaluating the non-recurring engineering costs of the proposed modification would recognize these specialized equipment requirements as a significant component of the upfront investment — investment that Berkley's hook-and-loop or simple magnet attachment mechanisms or Levy's mechanical alignment system do not require. EX2009, ¶256.

Moreover, Petitioner and its expert were unable to identify that anyone working in the field had, as of the priority date of September 25, 2018, successfully combined Baca's teaching of using strong magnetic arrays with a credit card carrying wallet. EX2009, ¶244. The absence of any prior commercial embodiment

of the proposed combination — despite the existence of all individual components in the market — is strong evidence that a PHOSITA would not have combined these teachings because there was no motivation to do so and because of the lack of a reasonable expectation of success. *Id.*

Dr. Phinney's motivation analysis for the Berkley-Baca combination is conclusory and unresponsive to these concerns. He argues only that Baca provides implementation details for using magnets to attach a wallet to a phone or phone case. EX1003, ¶148 (a PHOSITA would have “looked to references such as Baca that teach additional details for implementing magnets.”), *id.*, ¶150; EX2009, ¶298. But that ignores the central question: not whether Baca's arrays can be implemented in Berkley's wallet, but whether a PHOSITA would have been motivated to do so given the “notorious” card corruption risk, the cost differential, the manufacturing complexity, the adequacy of Berkley's existing attachment, and the ready availability of Levy's superior mechanical alternative. *Id.* Dr. Phinney's declaration does not address any of these factors or present any evidence that a PHOSITA would have sought out such implementation details, particularly in light of these facts weighing against any such combination. *See In re NuVasive*, 842 F.3d at 1384 (vacating finding of obviousness where “the PTAB never actually made an explanation-supported finding that the evidence affirmatively proved that the PHOSITA would

have sought this ‘additional information’” where the stated motivation was only to obtain “additional information”).

3. A PHOSITA Seeking Orientation Control Would Turn to Levy's Mechanical Alignment System, Not Baca's Card-Corrupting Rare Earth Arrays

Even setting aside the card corruption problem and the cost and manufacturing barriers of applying Baca's teaching to a wallet such as Berkley's, there is an additional independent reason a PHOSITA would not combine Berkley with Baca's rare earth arrays: for anyone seeking to add a stronger attachment and orientation-control to Berkley's wallet, Levy's mechanical alignment system is the obvious and superior solution. Both Berkley and Levy are directed to accessories for handheld personal electronic devices, smartphones specifically. EX2009, ¶¶279-281; EX1013, ¶1; EX2010, ¶¶32, 36. Baca is directed to mounting those same devices to stationary surfaces. EX2009, ¶277. A PHOSITA looking for attachment solutions for a smartphone wallet accessory would naturally look first to references directed to smartphone accessory attachment, placing Levy squarely in the relevant field. EX2009, ¶279.¹

¹ The Board confirmed during prosecution that Berkley's combination with Levy does not satisfy the claims because in Levy, mechanical features — not magnetic arrangements — cause the specific orientation. EX1002, 443.

The comparison between Levy's approach and Baca's approach for Berkley's use case is decisive on every metric and would have been known to PHOSITA. EX2009, ¶¶282-297.

Card safety: Levy's mechanical protrusion-and-recess system achieves orientation control without requiring any increase in magnetic field strength beyond what a simple, inexpensive permanent magnet already provides. No ferromagnetic shield is required. The card corruption problem that Baca's N48+ arrays create never arises. EX2009, ¶283.

Cost: Levy's alignment features are burned into the mold during manufacture, adding approximately zero marginal cost per unit. EX2009, ¶¶135, 284. Baca's approach requires arrays of N48+ magnets at orders-of-magnitude greater cost plus a ferromagnetic shield plus associated manufacturing equipment. EX2009, ¶¶135, 282.

Manufacturing complexity: Levy's keying system requires no rare earth magnet sourcing, no alternating polarity array engineering, no pole pattern coordination, and no ferromagnetic shield integration. EX2009, ¶285.

Form factor impact: Levy's protrusion fits within the recess when coupled, adding zero net thickness. Baca's approach adds magnet layers, a shield layer, and associated manufacturing complexity — directly contrary to Berkley's explicit design goal of minimizing bulk. EX2009, ¶286; EX1013, ¶¶25-26.

Strength: A PHOSITA evaluating the force requirements of the two applications would recognize immediately that Baca's high-grade rare earth arrays are orders of magnitude over-engineered for Berkley's use case — and that importing them into Berkley's wallet brings all of their cost, manufacturing complexity, and card-corrupting field strength to bear on a problem that did not require them. EX2009, ¶291. Levy's mechanical protrusion-and-recess system eliminates this entire tradeoff: finite element analysis using SolidWorks Simulation Premium confirms that a simple 1/16-inch ABS plastic protrusion withstands 20 pounds of downward force — approximately forty times the heaviest foreseeable load from a loaded wallet — with deformation of less than 0.001 inches and stress well below ABS's yield strength, using only small, inexpensive, low-grade magnets that produce no meaningful field at card-proximity distances. EX2009, ¶¶292-296. Levy achieves superior shear resistance, lower removal force, zero card corruption risk, and a fraction of the cost — all without a single rare earth magnet.

A PHOSITA comparing Levy's approach to Baca's approach would not have chosen to pursue Baca's teaching of using rare earth magnetic arrays: it is more expensive, more complex, imposes form factor penalties, and, most importantly, creates a fatal card corruption problem that requires yet another non-trivial engineering problem to address. EX2009, ¶297. A PHOSITA exercising ordinary

skill would choose Levy's approach. The availability of Levy's superior alternative confirms that the motivation to combine Berkley with Baca's rare earth arrays would have been lacking.

In short, arriving at the claimed invention by modifying Berkley's wallet with Baca's rare earth magnetic arrays and Goto's shielding, as Petitioner proposes, is based entirely on hindsight because the card corruption problem resulting from strong magnetic arrays would have discouraged, not motivated, any PHOSITA from following the path Petitioner proposes.

B. A PHOSITA Would Not Have Been Motivated to Apply Goto's Shield to the Open-Topped Pockets of Zhu and Kinshi

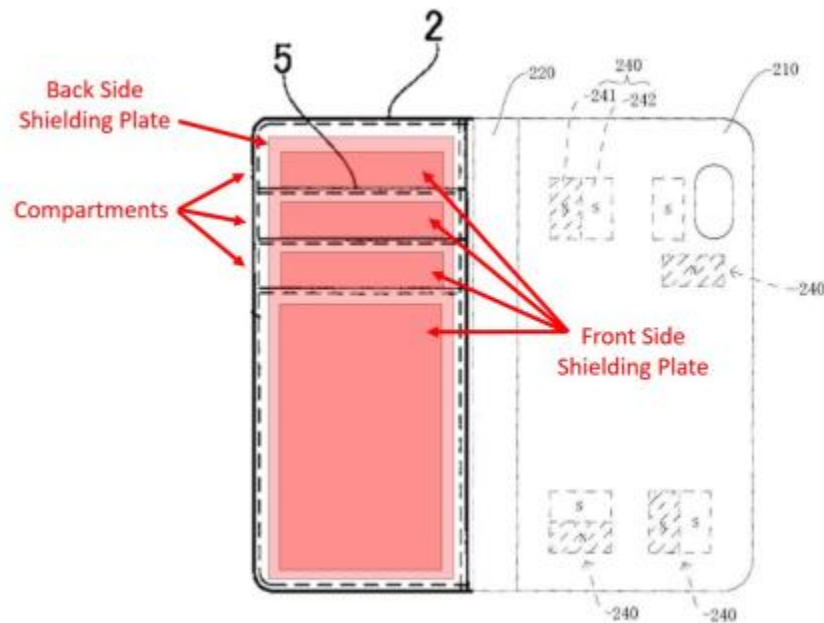
Petitioner's Zhu-Kinshi-Goto grounds share a common and fatal flaw: Goto's ferromagnetic shielding is structurally incompatible with the open-topped pocket sleeves that both Zhu and Kinshi employ. A PHOSITA, who would have understood that the basic physics of ferromagnetic shielding and the all-or-nothing corruption behavior of magnetic stripes, would have immediately recognized this incompatibility, and would therefore have had no motivation to apply the teaching of Goto's shield to Zhu and Kinshi's folios because it would have been entirely ineffective. EX2009, ¶303.

1. Goto's Shield Has One Purpose in the Proposed Combination — Card Protection — And It Cannot Achieve That Purpose in Any Relevant Operating Configuration

Goto's ferromagnetic shield serves one purpose in Petitioner's proposed combination: protecting the magnetically encoded data on credit cards from corruption by the magnets in Zhu's back plate 210 or Kinshi's base piece 3. EX1003, ¶¶273-277 (Zhu/Kinshi/Goto combination), ¶¶393-397 (Kinshi/Goto combination). No other benefit is attributed to the shield in Petitioner's combination theory. EX2009, ¶321.

2. The Shield Fails in the Folio-Closed Position — Dr. Phinney's Own Figure and Deposition Testimony Confirm the Geometric Failure

Dr. Phinney's Figure G (copied below) depicts the proposed combination of Zhu and Kinshi with Goto's shielding, showing Front Side and Back Side Shielding Plates as rectangles within the walls of the cover piece — and those shielding plates are depicted as terminating below the pocket openings. EX1003, ¶294; EX2021, 80-81 (confirming same).



The termination of the proposed shield below the pocket opening is a geometric necessity: shielding material cannot be placed at or above the pocket opening without physically blocking the opening and preventing cards from being inserted or removed. EX2009, ¶323. Dr. Phinney further confirmed that, with the folio modified to incorporate a shield, the cards would protrude as shown below. EX2021, 80:25-81:2.



As proposed, the shielding plates therefore would not extend to cover the portion of the card that protrudes above the pocket opening — the precise portion where the magnetic stripe is located. The encoded data begins at approximately 7.5mm from the top of the card. EX2009, ¶¶107, 109, 312, 379. Physical measurements on commercial folio cases representative of Zhu and Kinshi designs confirmed that between 15mm and 22.5mm of the card is left exposed above the pocket opening, meaning that between 7.5mm and 15mm of the encoded tracks are exposed. EX2009, ¶312.

In the folio-closed position and phone removed, which Dr. Phinney identified as a normal operating configuration (EX2021, 70:3-18), the card pockets come into close proximity with the magnets in Zhu's back plate or Kinshi's base piece. The magnetic stripe, within the protruding, unshielded zone above the shielding plate, is in direct proximity to those magnets through an unshielded air path. EX2009, ¶324. Any exposure of any portion of the magnetic stripe to a field exceeding the damage threshold renders the entire card non-functional. EX2009, ¶325. The front-side shielding plate cannot intercept the relevant field path in this configuration. EX2009, ¶¶324-325. It provides zero net protection.

3. The Shield Also Fails When the Folio Is Folded Back — And Adds a New Functional Problem

Dr. Phinney identifies the folio-folded-back position as the second of the two primary operating scenarios in his motivation analysis. EX1003, ¶¶273-277; EX2021, 74:13-75:9. In this position, the cover piece folds approximately 180 degrees away from the phone, sitting against Zhu's back plate 210 or Kinshi's base piece 3 with the card pockets accessible and facing outward. EX2009, ¶328.

In this configuration, the Back Side Shielding Plate cannot intercept the relevant field path. The magnetic field lines from the magnet groups to the exposed stripe tips travel through air around the top edge of the cover piece — not through the Back Side Shielding Plate, which is located in the back wall of the cover piece below the pocket openings. EX2009, ¶¶335-336. The field lines traveling to the exposed stripe tips reach those tips by traveling over and around the top edge of the cover piece through unshielded air. *Id.* The Back Side Shielding Plate is simply not in the relevant field path. *Id.*

Physical testing confirmed that in the folded-back position, the magnetic field measurable from the outside of the wallet — the side that faces the opposite panel — was 810 Gauss without the phone in place and increased to 1,206 Gauss when a phone was placed into the phone case, a roughly 49% increase in field strength. EX2009, ¶331. When the phone is in place and the wallet is folded back, the

magnetic field that reaches the cards' magnetic stripes actually increases, not decreases, relative to the baseline. *Id.*

Additionally, adding shielding to the outside of the card side of the wallet creates a new functional problem: it would prevent the magnets on the phone side panel from magnetically holding the wallet panel in place when the wallet is folded back. EX2009, ¶333 (noting that without a secure attachment, all of your valuables on the credit card side of the wallet would flop around slinging cards and cash every time you opened it up.). A PHOSITA would further have been dissuaded from the proposed modification because it would eliminate an existing, valued functional feature. EX2009, ¶334.

4. Dr. Phinney's Reliance on Goto's Attenuation Rationale Is Unsupported by the Evidence and Contradicted by His Own Deposition Testimony

Dr. Phinney relies on Goto's stated “attenuation effect due to distance of total thickness of the composite” as the basis for the shielding benefit he attributes to the proposed combination. EX1003, ¶274. But this reliance misapplies Goto's disclosure. Goto's attenuation rationale depends entirely on the fully enclosed geometry of Goto's card holder, in which all field lines from any external source must pass through the composite wall to reach the card because there is no bypass air path. EX2009, ¶337. In Goto's fully enclosed geometry, every approach path from the external field source to the card encounters the composite wall, and

attenuation scales with the total composite thickness that the field must traverse on that path. *Id.*

Dr. Phinney himself confirmed the physical prerequisite underlying this attenuation: permeable materials “can guide things away from the inner compartment *if you surround that compartment with permeable material.*” EX2021, 56:13-57:5 (emphasis added). Goto's case surrounds its compartment. EX1012, FIGS. 16-18. Kinshi's and Zhu's open-topped pockets do not. Dr. Phinney also acknowledged that magnetic flux can take many different paths and that even where a permeable circuit is provided, there is leakage flux and fringing fields. EX2021, 76:10-77:2. In Kinshi's and Zhu's open-topped pockets, the dominant field path to the exposed stripe tips travels through air around the open top edge of the cover piece — without encountering any shielding material and with essentially zero attenuation. EX2009, ¶338. Goto's attenuation rationale simply does not apply. *Id.*

Dr. Phinney's testimony amounts to the assertion that Goto's shielding would provide at least some protection against leakage flux even where the primary field path bypasses the shield entirely. But that is not evidence of motivation to combine — it is an admission that the primary field path is unaddressed by the proposed combination. The all-or-nothing character of magnetic stripe corruption means that addressing leakage flux while leaving the primary field path open provides no net

protection to the cards' encoded data. EX2009, ¶¶345, 365. This would have been known to a PHOSITA and led them away from making the proposed combination.

5. Physical Testing Confirms What a PHOSITA Would Have Known All Along

Physical testing eliminates any remaining doubt about the card corruption consequences of the prior art combinations Petitioner proposes. The results are unambiguous, they are directly relevant to the prior art configurations Dr. Phinney relies upon, and — critically — they are not surprising. They are exactly what a PHOSITA would have predicted before the tests were run.

Patent Owner's expert purchased two gift cards, verified each was fully functional, and tested them in commercially available folio cases representative of the Zhu and Kinshi designs across all three relevant operating configurations: open, folded back approximately 180 degrees, and closed without a phone. EX2009, ¶¶346-349. Card 2, tested in the Kinshi-style folio, was rendered completely non-functional after a small number of normal insertion and removal cycles — the routine motion of a user accessing cards during daily use. EX2009, ¶351. The card reader could detect a residual magnetic signal but could not reconstruct any valid data. The card was dead. EX2009, ¶351.

The second test is even more instructive. Card 1, which survived the Zhu-style folio testing unscathed, was then exposed to a single grade N42 neodymium magnet

— smaller than a shirt button, and weaker than the N48 minimum Baca specifies, let alone Baca's preferred N52 grade. EX2009, ¶¶353-354. After a few passes at wallet-proximity distances, the magnetic card was completely demagnetized. The card reader treated the stripe as blank plastic. EX2009, ¶357.

This testing confirms the futility of the Zhu-Kinshi-Goto combination. Both cards were corrupted through direct air-path exposure of the magnetic stripe to the field source — precisely the exposure condition that exists in Zhu's and Kinshi's open-topped pocket designs, where the stripe protrudes above the pocket opening through an unshielded air path in every operating configuration. EX2009, ¶362. Adding Goto's iron foil to the pocket walls cannot close that bypass path. It does not shield the protruding stripe from the field source. It provides zero net protection. EX2009, ¶365. As Patent Owner's expert concluded, the magnet that completely wiped Card 1 “resides in a part of the wallet that is not shieldable.” EX2009, ¶362. A PHOSITA who understood this would have had no motivation to bear the cost and complexity of adding Goto's shield to accomplish nothing. EX2009, ¶365.²

² This testing also confirms that the card corruption risk from Baca's more powerful magnets in Berkley's wallet is not speculative — it is a foreseeable, predictable consequence that a PHOSITA would have identified when contemplating the proposed combination of Berkley and Baca. EX2009, ¶364. As a

A PHOSITA would have understood, before making the proposed modification, that it cannot achieve its only intended purpose of protecting the magnetic cards in this baseline operating configuration. EX2009, ¶365. As such, a PHOSITA would have dissuaded, not motivated, from incurring cost and manufacturing complexity required to make a modification given that it did not have a reasonable probability of success. *Id.*

6. Dr. Phinney Did Not Consider the Cost of Applying Goto's Shields to the Folios of Zhu and Kinshi

In addition to the futility of combining Goto's shield with the folios of Zhu or Kinshi, the cost of ferromagnetic shielding material and manufacturing complexity, would have further dissuaded a PHOSITA from making the proposed combination. The addition of Goto's shield provides no aesthetic benefit, no structural benefit, and no functional benefit other than the purported card protection Dr. Phinney identifies. EX2009, ¶321. Critically, Dr. Phinney admitted that he did not consider whether modifying Zhu or Kinshi to include Goto's shield would add cost, manufacturing complexity, thickness, or weight. EX2021, 58:22-60:9. A PHOSITA would not add cost and manufacturing complexity to a consumer product without realizing a

result, they would have been discouraged from making such a combination, not motivated toward it.

material benefit that justifies the added expense. EX2009, ¶322. Where the only stated purpose of a proposed modification cannot be achieved in the context in which the modification is proposed, the motivation to make the combination is lacking. *Plas-Pak Indus., Inc.*, 600 F. Appx. at 758-59; *DePuy Spine*, 567 F.3d at 1326; *Keurig Green Mountain*, IPR2016-01394, Paper 10 at 16; *Shaw Indus.*, IPR2013-00132, Paper 42 at 27-28.

C. Neither Zhu Nor Kinshi Discloses the Claimed Compartment

An independent and dispositive basis for denying unpatentability on all Grounds 2A-2E and 3A-3F is that neither Zhu nor Kinshi discloses a “compartment” within the meaning of the '641 Patent's claims. This failure is not curable by combining Zhu or Kinshi with Goto, which contributes no wallet structural features.

The Board construed “compartment” during prosecution as “a part or space marked or partitioned off.” EX1002, 455. A space that is “partitioned off” requires structural walls or surfaces that separate the interior space from the exterior on all relevant sides. EX2009, ¶373. The '641 Patent's specification and figures consistently depict the compartment as exactly such a bounded, enclosed space — walls on all sides, with the ferromagnetic shield interposing between the compartment's device-side face and the magnetic arrangements. EX2009, ¶¶368-372. No embodiment depicts or describes the compartment as exposing any portion of the face of any stored card when the wallet is in use. EX2009, ¶372. That enclosed

character is structurally necessary: the shield can only interpose between the arrangements and the compartment's contents if the compartment has a defined boundary on the device-side face against which the shield is positioned. *Id.*

Zhu's panel 230 does not satisfy this construction. Dr. Phinney acknowledged in his declaration that Zhu's panel 230 is “simply silent” with respect to the three elongated ovals depicted on it. EX1003, ¶121. He cannot identify those features, explain their function, or establish their structural character from anything Zhu actually discloses. *Id.*; EX2009, ¶374. A reference that provides no textual description of the structural features Petitioner relies upon as compartments cannot establish that those features constitute a bounded, partitioned space satisfying the compartment requirement under any reasonable construction. *Id.*

Petitioner's reliance on Kinshi's pockets fare no better. Kinshi's pockets do not satisfy the compartment requirement either, for reasons that are explicitly confirmed by Kinshi's own specification. Kinshi states that “openings of the pockets 5 are formed in a direction along the horizontal direction in FIG. 1 to allow cards to be slid in and out in the vertical direction.” EX1010, ¶15. A PHOSITA would have understood that Kinshi's pocket structure as an open-topped sleeve in which cards are retained below and exposed above. EX2009, ¶186. A three-sided sleeve that is open at the top by deliberate design is not “partitioned off” from the exterior in any meaningful sense with respect to that top face. EX2009, ¶187.

The distinction between a sleeve and a compartment is both structural and functional. A compartment has a defined boundary on the device-side face — the face facing the magnets — and it is precisely that defined boundary that allows the ferromagnetic shield to occupy the positional relationship the claims require, interposing between the arrangements and the compartment. EX2009, ¶372. In the folio-closed position, the side of Kinshi's pocket that faces the magnets is the open top — not a structural wall, but a deliberately open insertion and removal path. There is no defined boundary on that face. Adding a shielding plate to the front and rear walls of the pocket does not create a boundary on the top face, which remains open. EX2009, ¶¶326, 379. The shield is therefore not “between the arrangements and the compartment” in the sense the claims require, because the field from the magnetic arrangements reaches the protruding card tops through the open top face that the shield cannot cover. EX2009, ¶¶377, 379.

These two failures — the functional one (open top creates a bypass air path that defeats shielding) and the structural one (open top means no defined compartment boundary on the device-side face) — are not separate problems. They are two aspects of the same underlying architectural difference: the '641 Patent's bounded, enclosed compartment versus Zhu and Kinshi's open-topped sleeve pockets. No combination of Zhu or Kinshi with Goto can produce the claimed structural relationship because the “between the arrangements and the compartment”

positioning requires a compartment with a defined boundary on the arrangements side — which Zhu and Kinshi's open-topped pockets do not have. EX2009, ¶379.

D. Neither Zhu Nor Kinshi Discloses the Claimed Content Removal Slot

Claim 2 depends from claim 1 and adds the requirement that “the body defines at least one content removal slot.” The content removal slot is a discrete structural element separate from and additional to the compartment that claim 1 already requires. EX2009, ¶380. The specification depicts it as a feature defined by the wallet body that provides a specific access point through which a user can push or guide a card out of the already-bounded compartment. EX2009, ¶¶381-382, 385. Its function presupposes an already-bounded compartment from which content is to be removed — without an enclosed compartment, there is no enclosed space from which the slot provides access. EX2009, ¶385.

Under the principle of claim differentiation, the content removal slot must be a distinct structural feature that adds a meaningful limitation beyond the compartment opening already required by claim 1. If the content removal slot were the same structure as the compartment opening, claim 2 would add nothing to claim 1, rendering the dependent claim superfluous — a result the claim differentiation principle prohibits. *See Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir. 2006).

Zhu provides no basis for the content removal slot claim element. EX2009, ¶386. As Dr. Phinney concedes in his declaration, Zhu's panel 230 is “simply silent” regarding the elongated ovals depicted on it. EX1003, ¶121. A reference that cannot establish from its own disclosure that its features are compartments cannot simultaneously establish that those same features constitute a distinct content removal slot for accessing those undisclosed, undescribed compartments. EX2009, ¶387. Moreover, the very ovals that Petitioner relies upon as the alleged compartments for claim 1 cannot simultaneously constitute the content removal slot that claim 2 requires as an additional, distinct structural element. EX2009, ¶388.

Kinshi presents the identical double-use problem, made explicit by Dr. Phinney's own claim mapping. For claim element 1.A, Dr. Phinney identifies Kinshi's pockets 5 as the claimed compartment. EX1003, ¶¶376-377, ¶283. For claim 2's content removal slot, Dr. Phinney identifies the openings of Kinshi's pockets 5 — the same structure he already mapped to the compartment — as the claimed content removal slot. EX1003, ¶327. This is the precise structural identity the claim differentiation principle prohibits. The opening of Kinshi's pocket is simultaneously what Dr. Phinney relies upon to define the pocket as a compartment and what he relies upon as the content removal slot — a single structural feature pressed into double service for two distinct claim elements in a dependent claim relationship. EX2009, ¶¶391-392.

Beyond the claim differentiation problem, Dr. Phinney's mapping is substantively incorrect. Kinshi's pocket opening is not a discrete slot cut into an otherwise bounded compartment. It is the structural feature that defines the pocket as an open sleeve in the first place. EX2009, ¶395. A content removal slot, as used in the '641 Patent, is a discrete access feature defined by the wallet body that provides a dedicated mechanism for interacting with cards inside an already-enclosed compartment. EX2009, ¶394. Kinshi's pockets 5 have no already-enclosed compartment. *Id.* Kinshi has only one opening per pocket — an opening that is simultaneously the entry path and the exit path and the structural feature that prevents the pocket from qualifying as a compartment in the first place. EX2009, ¶394. That single opening cannot be deconstructed into a compartment and a distinct content removal slot because those two structures require two different structural features. EX2009, ¶395.

No reference in either the Zhu/Kinshi/Goto combination supplies the distinct content removal slot structural element that claim 2 requires. Goto contributes only shielding — no wallet structural features. Zhu's unexplained ovals cannot supply the slot because Dr. Phinney himself cannot identify them as compartments, let alone as a distinct content removal slot in addition to those compartments. Kinshi's single pocket opening cannot supply both the compartment and the slot without violating

the claim differentiation principle. Grounds 2A-2E and 3A-3F therefore fail to demonstrate the unpatentability of claim 2. EX2009, ¶¶396-399.

VI. EVIDENCE OF NONOBVIOUSNESS CONFIRMS THE PATENTABILITY OF THE CHALLENGED CLAIMS

The Federal Circuit has repeatedly emphasized that the objective indicia constitute “independent evidence of nonobviousness.” *Pressure Prods. Med. Supplies, Inc. v. Greatbatch Ltd.*, 599 F.3d 1308, 1319 (Fed.Cir. 2010). Indeed, objective indicia “may often be the most probative and cogent evidence of nonobviousness in the record.” *Ortho-McNeil Pharm. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1365 (Fed.Cir. 2008); *see also Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 306 (Fed.Cir. 1985) (Objective indicia “may be the most pertinent, probative, and revealing evidence available to the decision maker in reaching a conclusion on the obviousness/nonobviousness issue.”). Such evidence “may often establish that an invention appearing to have been obvious in light of the prior art was not.” *Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 F.2d 1573, 1575 (Fed.Cir. 1984).

These objective criteria help inoculate the obviousness analysis against hindsight. The objective indicia “guard against slipping into use of hindsight and to resist the temptation to read into the prior art the teachings of the invention in issue.” *Graham v. John Deere Co.*, 383 U.S. 1, 36, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966).

Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1538 (Fed. Cir. 1983) (“[E]vidence rising out of the so-called 'secondary considerations' must always when present be considered.”).

Objective evidence of nonobviousness — commercial success, long-felt need, industry skepticism, copying, and unexpected results — is not peripheral to the obviousness analysis. It is part of it. Where, as here, that evidence is substantial and corroborated across multiple independent sources, it independently defeats Petitioner's obviousness case. The nexus between the claimed invention and each category of evidence below is direct: the commercial success, the long-felt need, the skepticism, copying by competitors, and the unexpected results all trace to the specific features the claims recite — the dual alternating-polarity magnetic arrangements, the ferromagnetic shield, and their integrated architecture. EX2024, ¶¶6-32.

A. Commercial Success

The MagBak Wallet launched on Kickstarter on November 5, 2018, with a \$15,000 funding goal. The campaign was oversubscribed within three days. Over forty-five days, backers pledged \$62,478 — more than four times the goal and well above the threshold that only 1.7% of all Kickstarter campaigns have ever reached as of December 2021. EX2024, ¶10; EX2009, ¶404.

General preorder opened November 22, 2018, with shipping beginning February 6, 2019. In its first full year, the MagBak Wallet experienced 2,409.3% growth. Year-over-year sales growth continued at 163% between 2019 and 2020 and 69% between 2020 and 2021 — the latter figure achieved notwithstanding the entrance of well-funded competitive products. EX2024, ¶11; EX2009, ¶405. The product now carries a 4.87-star average across more than 1,000 verified customer reviews, with reviewers specifically and repeatedly identifying the magnetic hold and on-phone positioning as the features driving their preference for the MagBak Wallet over competing products — including Apple's own heavily marketed alternative. EX2024, ¶19; EX2009, ¶406.

When the MagBak Wallet entered the market, it was a new product category. There were no magnetically connected wallets for mobile devices commercially available. EX2024, ¶12. That market vacuum is itself evidence of long-felt need — the consumer demand existed, and yet no one had produced a commercially viable product combining strong orientation-controlling magnetic arrays with a wallet that safely carried credit cards. The reason is precisely what the '641 Patent solves: the card corruption problem that any PHOSITA would have recognized as the obstacle, and that no prior art combination teaches how to overcome. EX2009, ¶407.

B. Long-Felt Need

Smartphones were already ubiquitous by 2018, wirelessly charged, and carried by users who simultaneously needed to carry credit cards, identification, and cash. EX2024, ¶20. The need for a removable wallet accessory thin enough for a pocket, strong enough to stay attached during normal handling, and safe for the magnetic cards it carries was obvious to anyone who carried both a phone and a wallet — which is to say, essentially everyone. Yet the market contained no solution. The MagBak Wallet's immediate commercial success — oversubscribed in three days, 2,409% growth in year one — is the market's answer to how long that need had gone unmet and how directly the claimed invention addressed it. EX2009, ¶408.

C. Industry Skepticism

The skepticism the '641 Patent's inventors confronted was not vague commercial uncertainty. It was a specific, technical concern about whether strong magnets could be placed in a credit card wallet at all. A common consumer concern — documented in contemporaneous Reddit threads and on the MagBak website itself — asked directly: “Won't the magnetic field erase the magnetic strip on the credit card?” EX2024, ¶21. This is not the skepticism of a lay audience unfamiliar with the technology. It is the same concern that a PHOSITA conducting a Failure Modes and Effects Analysis would have identified as the threshold barrier to the claimed combination, as Patent Owner's expert confirms. EX2009, ¶¶239-243, 409.

Apple itself validated the legitimacy of this concern when it launched MagSafe in October 2020. Apple issued a formal warning — reported by Tom's Guide as serious enough to call MagSafe's “killer feature” status into question — stating: “Don't place credit cards, security badges, passports, or key fobs between your iPhone and MagSafe Charger, because this might damage magnetic strips or RFID chips in those items.” EX2024, ¶23. Apple, a company with vastly more engineering resources than 1LSS, warned consumers to keep cards away from its magnets, is powerful evidence that the '641 Patent's solution was not obvious. EX2009, ¶410.

The K&J Magnetics blog, an industry-recognized source on magnet engineering, independently confirmed the underlying physics, noting that multiple magnets with a small gap between them “can produce a really strong magnetic field” and that this worst-case scenario is precisely what orientation-controlling magnet arrays create. EX2024, ¶24. Industry sources thus corroborate both the problem and the non-triviality of solving it. EX2009, ¶411.

D. Copying by Competitors

On January 13, 2020, fourteen months after 1LSS launched the MagBak Wallet and while the technology was in active commercial deployment, Apple ordered three MagBak Wallets via expedited two-day shipping to Apple's headquarters at One Apple Park Way, Cupertino, California. EX2024, ¶26. Nine

months later, on October 13, 2020, Apple introduced its competing MagSafe Wallet. EX2024, ¶25. Subsequent disassembly and analysis of Apple's MagSafe Wallet confirmed that it incorporated 1LSS's patented technology, the proprietary arrangement and configuration of magnets with specific alternating polarity regions that couple the wallet to the device in a specific orientation, as claimed in the '641 Patent. EX2024, ¶27; EX2025, Ex. B; EX2009, ¶412. Apple now stands before this Board arguing that the invention it obtained from the Patent Owner, studied, and copied into its competing wallets, was obvious all along. The Board should weigh that argument accordingly.

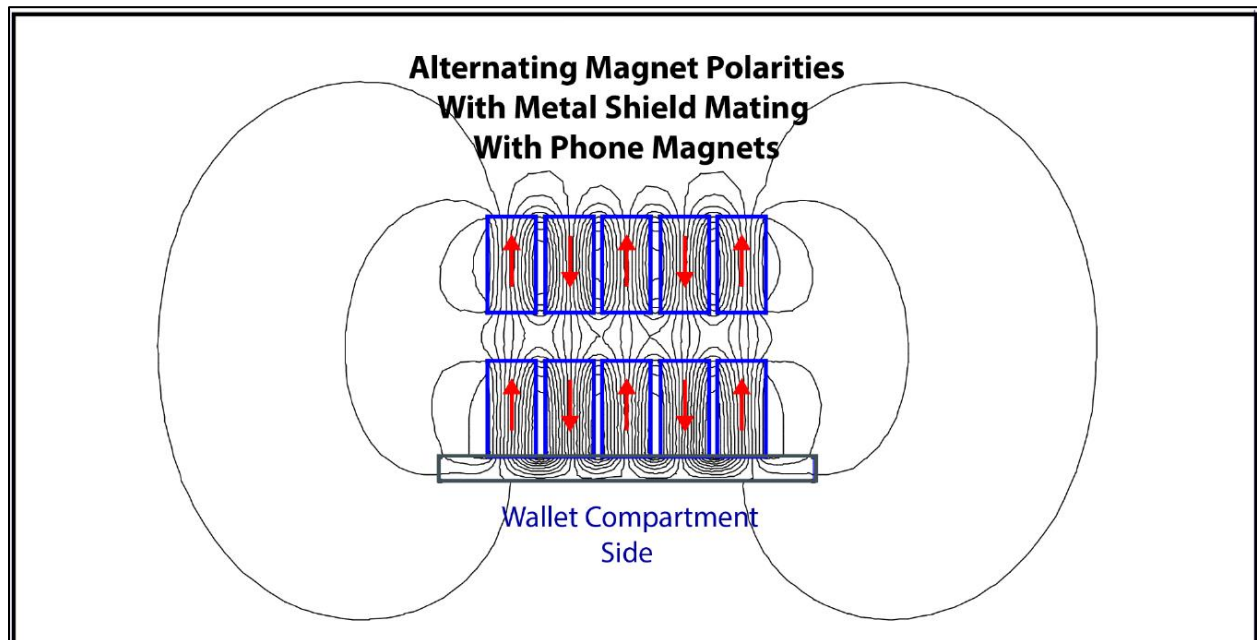
E. Unexpected Results

The most technically significant objective evidence is the unexpected results produced by the claimed combination of alternating-polarity magnetic arrangements and a ferromagnetic shield. A PHOSITA in 2018 would have expected these elements to trade off against each other — standard magnetic engineering treats field containment and attachment force as competing design objectives. EX2024, ¶29. What the '641 Patent's architecture produces instead is synergy: the same component that protects the cards also strengthens the connection to the phone, and the two effects compound rather than trade off. EX2024, ¶36; EX2009, ¶413.

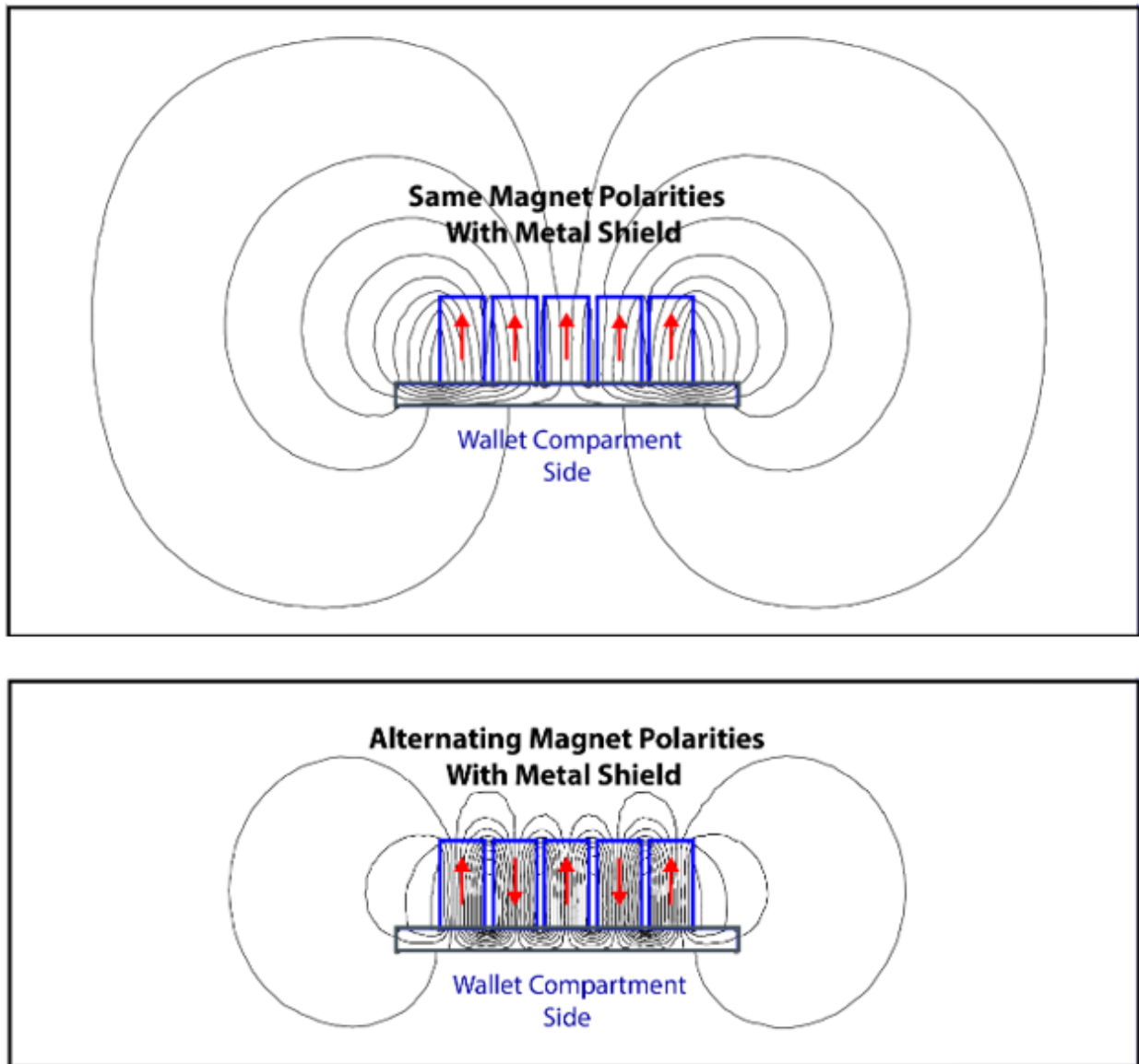
The mechanism, illustrated by the field-line diagrams, is magnetic reluctance. Air has high reluctance; the ferromagnetic shield has very low reluctance. Without

the shield, field lines from the magnet array loop back through the wallet compartment, passing directly through the stored cards. EX2024, ¶30. With the shield, those field lines are offered a lower-reluctance return path through the shield material and are rerouted away from the card compartment entirely. EX2024, ¶31. As the field-line diagrams show, the gray lines representing the unshielded field that passed through the card compartment disappear in the shielded configuration, while the black lines representing the shielded field extend outward in larger lobes — rerouted, not eliminated. EX2024, ¶31; EX2009, ¶414.

As shown below, the counterintuitive result emerges when the wallet is brought into proximity with the phone's magnets. The rerouted field lines, rather than looping back through air on either side of the wallet, now travel across the gap and through the phone's magnets, forming closed loops that span the wallet-to-phone interface. These cross-gap loops produce attachment force. Because the shield provides a low-reluctance return path, the entire magnetic circuit closes more efficiently — and lower total reluctance in a magnetic circuit produces stronger attractive force across the air gap. EX2024, ¶32. The shield strengthens attachment. A PHOSITA would have predicted the opposite. EX2009, ¶415.



As shown below, the second set of field-line diagrams isolates the role of alternating polarity. A same-polarity design with a shield (top diagram) produces large, far-reaching field loops that extend well beyond the magnet array toward the card compartment. An alternating-polarity design with a shield (bottom diagram) confines its field to small, tight loops between adjacent magnets. EX2024, ¶34. The alternating-polarity arrangement starts with a fundamentally smaller stray field for the shield to manage — reducing field strength at the card compartment by an order of magnitude or more compared to same-polarity configurations, falling well below the damage threshold for high-coercivity credit card stripes and below the threshold at which low-coercivity stripes become vulnerable. EX2024, ¶33; EX2009, ¶416.



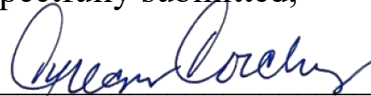
The result is a design where one architectural decision, the combination of alternating-polarity arrays with a ferromagnetic shield, simultaneously solves three distinct problems: it protects stored credit cards from magnetic corruption, it strengthens the wallet's attachment to the phone, and it enables deterministic orientation control that supports reliable kickstand and finger-loop functionality. EX2024, ¶35. None of these results follows predictably from either element alone,

and the combination of all three from a single integrated design decision is precisely the kind of unexpected synergy that the nonobviousness doctrine is designed to protect. EX2009, ¶417.

VII. CONCLUSION

Petitioner has not demonstrated by a preponderance of the evidence that the challenged claims are unpatentable. The Board should find Claims 1-11 of the '641 Patent are not unpatentable. For the Berkley-Baca grounds, no PHOSITA would have been motivated to combine Baca's card-corrupting rare earth magnetic arrays with Berkley's credit card wallet because the combination destroys the Berkley's wallet's primary function. For the Zhu-Kinshi-Goto grounds, Goto's shield is geometrically incompatible with Zhu's and Kinshi's open-topped pockets in every relevant operating configuration, confirmed by Dr. Phinney's own figure and deposition testimony, and neither Zhu nor Kinshi discloses a compartment or content removal slot satisfying the claims.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I certify the **PATENT OWNER'S RESPONSE** in connection with Inter
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CERTIFICATE OF WORD COUNT

Under 37 C.F.R. §42.24(d), the undersigned attorney for the Patent Owner, 1LSS, declares this **PATENT OWNER'S RESPONSE** has 12,993 words, according to Microsoft Word® word count tool, excluding the parts of the Response exempt by 37 C.F.R. §42.24(a)(1).

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