

RIGHT TO REPAIR: WHOSE RIGHT IS IT ANYWAY?

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Abstract

This Article posits that the right to repair equipment purchased by consumers from equipment manufacturers is an implicit right afforded to the consumer by virtue of the equipment purchase. Limitations imposed by manufacturers on the operability, maintenance, and repair of equipment violate the rights of consumers, and the ongoing push by equipment manufacturers to control the maintenance of equipment post-sale runs afoul of the goals of intellectual property law, common law contract and property considerations, and public policy considerations. This Article seeks to highlight the arguments of both consumers and equipment manufacturers, examine the relationship that intellectual property laws play in the fight for the right to repair, and evaluate pending legislation targeting the right to repair.

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Introduction

Farming equipment is expensive; it is expensive to purchase, it is expensive to operate, and it is expensive to maintain. But imagine a small-town farmer who spent over \$1,000,000 on a new combine (or other piece of farming equipment) and this machine was the only thing standing between feeding his family and selling his farm.¹ And then imagine that it suddenly breaks down or perhaps needs routine maintenance. Should he not have the ability to repair and maintain the equipment in the most cost-effective way possible?

But then also imagine that the combine manufacturer requires any farmer who seeks to maintain or repair the combine have a specially licensed software tool.² The software tool provides codes necessary to access various diagnostic features built into the farming equipment.³

Consider the plight of a farmer in rural America. Changing weather has left him with only forty-eight hours to harvest hundreds of acres of corn, and his expensive new John Deere combine is inoperable due to a low-voltage fault in a sensor.⁴ Because controls are put in place by the

¹ See *X-Series Combines*, JOHN DEERE, <https://www.deere.com/en/harvesting/x-series-combines/> [https://perma.cc/C7SD-6G2B] (describing the X9 1100 combine—quoted at \$1,079,934.00 list price under the website’s build your own option).

² See DEERE & COMPANY, *API Development License Agreement*, <https://developer.deere.com/clickThroughAPIAgreement.html> [https://perma.cc/527F-N2BK].

³ See *id.*

⁴ See Mike Lessiter, *Right to Repair Inquiry About John Deere’s Customer Service Advisor*, FARM EQUIP. (Sept. 16, 2022), <https://www.farm-equipment.com/blogs/6-opinions-columns/post/20733-right-to-repair-inquiry-about-john-deeres-customer-service-advisor> [https://perma.cc/U3FG-KY35].

combine manufacturer, he is unable to replace the sensor or clear the Central Processing Unit (“CPU”) code to turn on and operate his combine.⁵ As a result of this seemingly insignificant issue, his crops begin to rot in the field, the corn turns hard and starchy, and he loses nearly \$1,000 per acre in gross harvest profit.⁶ All for lack of a software tool.

Unfortunately, this is a situation all too familiar to the American farmer. Every year, farmers and equipment operators are left stranded by otherwise functional equipment rendered inoperable due to systemic lock-outs and exorbitantly priced or unavailable diagnostic tools.⁷ Furthermore, issues like the one above, are not relegated exclusively to the agriculture industry. Today, nearly every device sold encompasses some type of software, proprietary technology, or systemic lock-out that prevents the everyday consumer from utilizing the device to its full capacity.⁸

Now enter the right to repair. This movement, although not new, has garnered significant traction in the last several years. The right to repair, as the name suggests, is the right of consumers to repair a device on their own or have a technician of their choosing repair the device.⁹ The right to repair is a familiar concept to most older Americans and those who are accustomed to working on old things; however, in the modern, tech-focused, and disposable world of 2022, the intricacy of components, the lack of aftermarket information regarding the devices, and the software-centric nature of the devices essentially eliminate the possibility of repair by the everyday consumer.¹⁰

To be clear, neither state nor federal statute make it illegal to repair equipment, and courts’ subsequent interpretations further support this conclusion.¹¹ However, this is not the whole story. Despite the legality of repairing purchased equipment, the right to repair is useless without the concomitant ability to repair. Instead, the right to repair movement seeks to level the playing field between consumers and device manufacturers,

⁵ *See id.*

⁶ *See, e.g.,* NAT’L AGRIC. STAT. SERV., U.S. DEP’T OF AGRIC., AGRICULTURAL PRICES 9 (June 30, 2022),

https://www.nass.usda.gov/Publications/Todays_Reports/reports/agpr0622.pdf

[<https://perma.cc/AAH5-RED9>].

⁷ *See* Kevin O’Reilly, *Why Farmers Need Right to Repair*, U.S. PIRG EDUC. FUND (Feb. 1, 2022), <https://pirg.org/edfund/resources/why-farmers-need-right-to-repair-2/> [<https://perma.cc/Y3AD-9WTF>].

⁸ Daniel Moore, *You Gotta Fight for Your Right to Repair: The Digital Millennium Copyright Act’s Effect on Right-to-Repair Legislation*, 6 TEX. A&M L. REV. 509, 515 (2019).

⁹ *Id.*

¹⁰ *Id.* at 514.

¹¹ *See generally* Aro Mfg. Co. v. Convertible Top Replacement Co. (*Aro I*), 365 U.S. 336 (1961) (explaining distinction between permissible repair and impermissible reconstruction of patented equipment).

making available the requisite tools, knowledge, parts, and information necessary to facilitate the repair of devices.¹²

Big tech companies, automobile manufacturers, and agriculture equipment manufacturers, to name a few, vehemently oppose allowing consumers to repair and modify their produced devices.¹³ The companies, primarily the large technology companies like Apple and Microsoft, argue that permissive right to repair legislation would “let pirates rip off intellectual property and expose consumers to security risks.”¹⁴ Furthermore, companies like John Deere require would-be purchasers of their equipment to sign and adhere to prohibitive license agreements and terms of service that prevent tampering with the “security measures” on embedded software.¹⁵

Farming equipment, and more specifically tractors, harvesters, and combines, which historically have been simple machines comprised of steel, hydraulics, and rubber, are becoming increasingly more advanced; today, tractors are “slowly becoming more of a software device than a hardware device.”¹⁶ Therefore, device manufacturers consistently rely on purported fears of theft and misuse, backed by the force of federal intellectual property protection, to fight off right to repair legislation and maintain control of their equipment post-sale.¹⁷

This Article calls into question the alleged risks and concerns put forward by device manufacturers and argues that the benefits of permitting the repair of equipment by consumers will not be a significant detriment to device manufacturers. Further, a more permissive right to repair framework will also reduce waste, promote innovation, and abide by the spirit of intellectual property law in the United States.

This Article does not seek to undermine the capitalistic framework of the open market. Instead, this Article calls into question select practices

¹² See generally THE REPAIR ASS'N, *Working Together to Make Repair-Friendly Public Policy*, REPAIR.ORG, <https://www.repair.org/legislation> [<https://perma.cc/T2MR-EQB8>].

¹³ Jared A. Mark, *Realizing a New Right: The Right to Repair at the Federal Stage*, 23 N.C. J.L. & TECH. 382, 387 (2021).

¹⁴ *Id.*; see also Mark Bergen, *Microsoft and Apple Wage War on Gadget Right-to-Repair Laws*, BLOOMBERG (May 20, 2021 6:00 AM), <https://www.bloomberglaw.com/bloombergterminalnews/bloomberg-terminal-news/QTEH4NDWX2PS><https://www.bloomberglaw.com/bloombergterminalnews/bloomberg-terminal-news/QTEH4NDWX2PS> [<https://perma.cc/RQU7-XC7G>].

¹⁵ Todd Janzen, *Sorry, Right to Repair Advocates: You May be Right, but John Deere is on the Winning Side of History*, JANZEN AG TECH BLOG (Mar. 31, 2017), <https://www.aglaw.us/janzenaglaw/2017/3/29/fixing-the-right-to-repair> [<https://perma.cc/CB3Q-RSG2>].

¹⁶ *Id.*

¹⁷ See generally Leah Chan Grinvald & Ofer Tur-Sinai, *Intellectual Property Law and the Right to Repair*, 88 FORDHAM L. REV. 63 (2019).

of device manufacturers, which seem to run afoul of the spirit of open competition, policies underlying intellectual property protections, and controls put in place related to antitrust. It should also be noted that the Author opposes enactment of federal legislation to control enterprise; however, the driving forces behind the right to repair movement are public policy considerations which seek to preserve the free movement of labor, the right to work, and the ability to compete in the marketplace.¹⁸ Furthermore, this Article seeks to discuss the pending and proposed legislation related to the right to repair movement and offer commentary on its perceived effectiveness and likelihood of success in promoting consumer rights, particularly in the agriculture industry.¹⁹

This Article begins with a discussion and description of the right to repair movement, its history, and the positions taken by both consumers and device manufacturers. The Article continues with an explanation and evaluation of the legal structures related to the right to repair. Next, the Article discusses right to repair as it relates to the agriculture industry followed by an assessment of state and federal laws targeting the right to repair. The Article concludes with a proposed right to repair framework, accounting for the various competing interests and comporting with property and contract law, intellectual property law, and public policy considerations.

I. Introduction to the Right to Repair

A. The Right to Repair

The right to repair is not a novel concept.²⁰ From the conception of tools by mankind, the repair of these tools has been necessary to maintain their operability and promote the furtherance of technological innovation. Right to repair, a slogan used to describe the age-old practice of “self-repair,” is quite simple.²¹ The essential premise is that a consumer has purchased a device, the consumer owns the device, and accordingly, the consumer should have the right to use, maintain, and repair the device in the way the consumer deems most appropriate.²² Though deeply-rooted in the history of tools and innovation, codification of these rights has been

¹⁸ See THE REPAIR ASS'N, *supra* note 12.

¹⁹ See Thorin Klosowski, *What You Should Know About Right to Repair*, N.Y. TIMES: WIRECUTTER (July 15, 2021), <https://www.nytimes.com/wirecutter/blog/what-is-right-to-repair/> [<https://perma.cc/2L8H-LB44>].

²⁰ See *id.*

²¹ Mark, *supra* note 13, at 386.

²² S. Kyle Montello, *The Right to Repair and the Corporate Stranglehold over the Consumer: Profits over People*, 22 TUL. J. TECH & INTELL. PROP. 165, 166–67 (2020).

nearly non-existent in American jurisprudence.²³ Scattered case law has hinted at the presence of this right, but the political and market influences of large device manufacturers and the ever-growing reliance upon intellectual property protection by inventors and manufacturers has successfully stayed the push for codification and national acceptance of the right to repair.²⁴

B. History of the Right to Repair

Beginning in the twentieth century and with the onset of the Industrial Revolution and the breakthrough in interchangeable parts, manufacturers realized “that product durability often wasn’t in their economic self interest . . . So [they] found ways to induce consumption and discourage repair. As early as the 1920s, firms were exploring the strategies that would eventually become known as ‘planned obsolescence.’ By the 1950s, those techniques were cornerstones of consumer economy.”²⁵

Today, companies that do not engage in “planned obsolescence,” restrictive licensing, and post-sale control of their devices place themselves at a significant disadvantage.²⁶ Companies do not want their consumers to repair their devices; they want consumers to buy new devices.²⁷ However, if a repair is required, the companies want, and sometimes require, that consumers use their repair networks and branded, original equipment to maintain a monopoly on repair.²⁸ By maintaining a policy favoring replacement over repair, companies are able to exert control over the

²³ See Lurah Lowery, *DePaul & Michigan Law Professors Weigh in on Right to Repair*, REPAIRER DRIVEN NEWS (Sept. 23, 2022), <https://www.repairerdrivennews.com/2022/09/23/depaul-michigan-law-professors-weigh-in-on-right-to-repair/> [https://perma.cc/77U8-KSGF].

²⁴ *Id.*

²⁵ AARON PERZANOWSKI, THE RIGHT TO REPAIR: RECLAIMING THE THINGS WE OWN 49 (2022); see generally *id.* at 50–148 (discussing the history of the right to repair movement and intellectual property considerations related to right to repair).

²⁶ See *id.* at 56 (describing the economic incentives to planned obsolescence).

²⁷ Valerie Vande Panne, *Fight for Your Right . . . to Repair*, SALON (Feb. 27, 2019, 4:00 AM), http://www.salon.com/2019/02/27/fight-for-your-right-to-repair_partner [https://perma.cc/HU2L-VT8H].

²⁸ Nathan Proctor, *Corporations Are Co-Opting Right-to-Repair*, WIRED (Mar. 16, 2019 8:00 AM), <http://www.wired.com/story/right-to-repair-co-opt/> [https://perma.cc/L65F-TLDB] (discussing the variety of tactics companies undertake to block access to repair including the practice of not making available replacement parts or selling replacement parts at high markups, limiting access to repair information, and systematic lock-outs to void unauthorized repairs).

entire life-cycle of the device—they control the purchase, use, repair, disposal, and upgrade of said devices.²⁹

“Device makers rely on an assortment of economic, technological, and legal techniques to curtail repair.”³⁰ For example, the cost of repair services is priced to encourage the replacement of devices; marketing strategies emphasize incremental feature improvements in new devices to drive short upgrade cycles; and product designs incorporate components that are difficult to replace or require expensive tools to repair.³¹ Some devices, for all practical purposes, are impossible to repair.³²

Until the mid-2000s, scant state or federal legislation had been presented to combat this multi-layered control approach taken by device manufacturers.³³ However, in 2012, Massachusetts passed the first right to repair legislation in the United States.³⁴ While this legislation only applies in Massachusetts, it has set the stage for the consideration of complementary legislation by other states while simultaneously laying the important groundwork for pending federal legislation.³⁵ The Massachusetts state legislation requires automobile manufacturers to provide manuals and replacement parts to consumers for the purpose of repair.³⁶ The legislation prompted acquiescence by several automakers, who signed a national memorandum, making the terms of the Massachusetts bill applicable nationwide.³⁷ As a result, there is evidence that the legislation significantly increased the number and market share of small auto repair shops in the state, thus providing consumers with alternative, and often less expensive, means for repairing and servicing their vehicles.³⁸

At the time of drafting this Article, three important steps have been taken on the national level related to the right to repair. The first step

²⁹ See Aaron Perzanowski, *Consumer Perceptions of the Right to Repair*, 96 IND. L.J. 361, 363 (2021).

³⁰ *Id.* at 363.

³¹ *Id.* at 368.

³² See Jeff Suovanen et al., *AirPods Pro Teardown*, IFIXIT (Oct. 31, 2019), <https://www.ifixit.com/Teardown/AirPods+Pro+Teardown/127551>

[<https://perma.cc/5YKZ-9ZNG>] (discussing the sixteen steps and twelve tools needed to disassemble, service, and attempt to repair the Apple AirPods Pro in-ear headphones).

³³ See Kyle Wiens, *You Gotta Fight for Your Right to Repair Your Car*, ATL., Feb. 13, 2014, <http://www.theatlantic.com/technology/archive/2014/02/you-gotta-fight-for-your-right-to-repair-your-car/283791/>.

³⁴ *Id.*

³⁵ See *id.*

³⁶ See *id.*

³⁷ *Id.*

³⁸ Leo Kahane, *The Impact of the Massachusetts 2012 Right to Repair Law on Small, Independent Auto Repair Shops*, 29 APPLIED ECON. LETTERS 873, 879 (2021).

came in the form of a bill proposed in the House of Representatives, which sought “[t]o require original equipment manufacturers of digital electronic equipment to make available certain documentation, diagnostic, and repair information to independent repair providers.”³⁹ Despite the inability of this bill to leave the House, it began the conversation on the national stage.⁴⁰

The second step was an Executive Order from President Biden on July 9, 2021, which called upon the Federal Trade Commission (“FTC”) to limit anticompetitive practices of large companies and promote economic growth within the United States.⁴¹ Within the following year, “[t]he FTC voted unanimously to adopt this [O]rder [sic] and to ramp up law enforcement against repair restrictions.”⁴² Unlike the prior proposed House bill, this Executive Order has garnered outward acceptance on the national level among legislators and within several federal agencies.⁴³

Lastly, and most recently, on February 1, 2022, Senator Jon Tester (D-MT) introduced proposed legislation to the Senate floor aimed at the agriculture industry.⁴⁴ Senate Bill 3549, known as the Agriculture Right to Repair Act, seeks “[t]o require original equipment manufacturers to make available certain documentation, parts, software, and tools with respect to electronics-enabled implements of agriculture.”⁴⁵

This Bill takes notice of the arguments put forth by agriculture device manufacturers and establishes “fair and reasonable” exceptions to existing intellectual property laws for the purposes of diagnostics, maintenance, upgrading, reprogramming, repair, interoperability, and research, to name a few.⁴⁶

The right to repair movement has thus taken several significant steps forward in the last decade. However, these steps have not stopped device manufacturers from attempting to quell the movement and place further restrictions upon consumers. Therefore, this Article argues that until further steps are taken to protect consumers’ right to repair, device manufacturers will continually pursue further restrictions in the pursuit of increasing revenue and exercising control over their customers.

³⁹ Fair Repair Act, H.R. 4006, 117th Cong. (2021).

⁴⁰ *See id.*

⁴¹ Exec. Order No. 14036, 86 Fed. Reg. 36987 (July 9, 2021).

⁴² Alex Gray, *The Debate Over Right to Repair in 2022*, SUCCESSFUL FARMING (Mar. 9, 2022), <https://www.agriculture.com/machinery/repair-maintenance/the-debate-for-right-to-repair-in-2022-joe-biden-jon-tester-john-deere> [https://perma.cc/A3EK-5CF9].

⁴³ Klosowski, *supra* note 19.

⁴⁴ Agriculture Right to Repair Act, S. 3549, 117th Cong. (2022).

⁴⁵ *Id.*

⁴⁶ *Id.* at § 3(c)(1).

C. Consumers' Approach to the Right to Repair

The everyday consumer has an expectation that, upon the purchase of a device or piece of equipment, an implicit right exists which permits unrestricted access to the functionality, operability, and sustainability of the device or equipment.⁴⁷

Proponents of the right to repair movement “advocate that current practices [by device manufacturers] are anti-competitive and inefficient.”⁴⁸ Further, proponents also argue that the current “throw-away” culture is unsustainable and produces a tremendous amount of waste, especially “e-waste.”⁴⁹ Lastly, “proponents maintain that the right to repair fits within the historical framework of intellectual property law.”⁵⁰

Right to repair advocates seek four primary objectives.⁵¹ These objectives include: (1) make information available as it relates to “manuals, schematics, and software updates”; (2) make the parts and tools necessary to repair available to individuals and third parties; (3) allow “unlocking, adapting, or modifying a device, so an owner can install custom software”; and (4) require that manufacturers design products and devices that are capable of being repaired.⁵²

Consumers want to exercise dominion over the things they own.⁵³ However, device manufacturers intentionally design products that are difficult or impossible to repair and thus encourage replacement in favor of repair.⁵⁴ Presumably, consumers would reward device manufacturers who support permissive repair of their devices through additional and future patronage. Additionally, device manufacturers would likely see an increase in their goodwill, sales, and acceptance in the marketplace if permissive repair policies were adopted. However, while the wants of the consumers do not seem outlandish, as with all movements, compromise is necessary to balance the opposing interests of the consumers and the device manufacturers.

⁴⁷ Montello, *supra* note 22, at 166–67.

⁴⁸ Montello, *supra* note 22, at 177.

⁴⁹ *Id.*; see also Kyle Wiens, *Unfixable Computers Are Leading Humanity Down a Perilous Path*, WIRED (June 22, 2012, 6:30 AM), <http://www.wired.com/2012/06/apples-unfixable-devices/> [<https://perma.cc/AM5T-ENDJ>] (describing the effects on the global environment from the volume of waste produced from disposal of electronic devices, unsustainable mining practices for rare earth metals used in the manufacture of electronic devices, and the largely unregulated industries of electronic scrapyards).

⁵⁰ Montello, *supra* note 22, at 177.

⁵¹ Klosowski, *supra* note 19.

⁵² *Id.*

⁵³ Perzanowski, *supra* note 29, at 394.

⁵⁴ *Id.* at 361–63.

D. Manufacturers' Approach to the Right to Repair

Manufacturers do not want consumers to utilize the full potential of equipment functionality, as the more rights a consumer has over the repair, maintenance, and use of equipment, the less profit the manufacturer can generate.⁵⁵ As an overarching principle, “[o]pponents of right to repair maintain that repairs made outside of manufacturers’ authorized repair networks will lead to complications.”⁵⁶ These alleged complications may include “cybersecurity risks, corporate liability and consumer safety concerns, and warranty issues.”⁵⁷ Furthermore, opponents of right to repair legislation continually fall back on intellectual property law as a basis for their position.⁵⁸ Manufacturers believe that permissive right to repair legislation “will infringe on manufacturers’ intellectual property rights” including utility and design patent, trademark, copyright, and trade secret protections.⁵⁹

In addition to these arguments, some manufacturers also maintain that consumers do not actually own the products; instead, what consumers deem the purchase of the product is merely the manufacturer’s grant of a license to use the product.⁶⁰ Several manufacturers, especially in the technology and agriculture industries, require that customers agree to restrictive End User License Agreements (“EULAs”) and/or Terms of Service (“TOSs”) which forbid the unauthorized use of hardware or software in conjunction with the device, forbid the second-hand sale of used devices, and restrict the actions of the consumer post-sale.⁶¹

However, lurking beneath these justifications is a dominant driver—corporate profit.⁶² Although the manufacturers never state this explicitly, it is an unavoidable aspect of commercial enterprise.⁶³ It is no secret that companies need to make money. If companies do not make money, they will not be able to operate or produce the products upon which consumers desperately rely. “Manufacturers want to monopolize repair services because monopolizing repair is extremely profitable.”⁶⁴ In

⁵⁵ See Montello, *supra* note 22, at 176.

⁵⁶ *Id.* at 174.

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ Darin Bartholomew, Long Comment Regarding a Proposed Exemption Under 17 U.S.C. 1201, https://copyright.gov/1201/2015/comments-032715/class%2021/John_Deere_Class21_1201_2014.pdf [https://perma.cc/9XSS-V5Q8].

⁶¹ *Id.*

⁶² Montello, *supra* note 22, at 176.

⁶³ *Id.*

⁶⁴ *Id.*

addition to the profits generated from repair, manufacturers have determined that even more profits can be generated from replacement.⁶⁵ While repairs are lucrative, they require input from the manufacturer.⁶⁶ Companies must produce additional replacement parts, establish repair networks, and constantly update repair protocols, methods of analyzing claims, and pay technicians to perform the repairs.⁶⁷ Instead, companies tend to prioritize, and oftentimes forcibly encourage, a scheme of replacement and upgrade over repair.⁶⁸

Permissive right to repair requirements and legislation could significantly impact the bottom-line of companies. Requiring the disclosure of proprietary information, eliminating artificially created monopolies on repairs, and reducing the number of consumers replacing their devices will result in less corporate profits.⁶⁹

However, advocates for a more permissive right to repair framework in the United States point to a key inconsistency in the “mindset” of many large companies. As put forward by the 2021 Edelman Trust Barometer, consumer trust in companies is approaching an all-time low.⁷⁰ “Trust . . . has always been the most sacred coin of corporate currency.”⁷¹ However, many companies are no longer taking active steps to rebuild or inspire confidence despite the fact that many consumers refuse to buy products from companies that they do not trust and are willing to openly criticize these companies to others.⁷² Although instilling trust and confidence in their customers would likely increase sales, revenue, and market share, companies often do not focus on increasing goodwill due to its perceived input costs and the difficulty associated with measuring a rate of return from their efforts.⁷³ Instead, companies focus

⁶⁵ *Id.* at 177.

⁶⁶ Perzanowski, *supra* note 29, at 365.

⁶⁷ *See generally id.* (summarizing various obstacles to repair by manufacturers, consumers, or independent repair shops).

⁶⁸ *Id.* (touching on three strategies companies use for frustrating repair: design patents, trademarks, and trade secrets).

⁶⁹ *Cf.* Montello, *supra* note 22, at 176–77 (limiting restrictions on repairs will limit a profitable revenue stream for manufacturers).

⁷⁰ Chas Withers, *Trust, Where Have You Gone? Four Tips to Rebuild Goodwill in a Time of Fast-Eroding Trust*, DIX & EATON (Feb. 4, 2015), <https://www.dix-eaton.com/our-blog/trust-where-have-you-gone-four-tips-to-rebuild-goodwill-in-a-time-of-fast-eroding-trust/> [<https://perma.cc/Z54H-CMP3>]; *see also* EDELMAN, EDELMAN TRUST BAROMETER 2021: GLOBAL REPORT (2021) <https://www.edelman.com/sites/g/files/aatuss191/files/2021-03/2021%20Edelman%20Trust%20Barometer.pdf> [<https://perma.cc/6JCV-57WA>].

⁷¹ DIX & EATON, *supra* note 70.

⁷² *Id.*

⁷³ *Cf. id.* (noting the long road to rebuilding trust comes with risk, but the ability to rebuild trust is critical to the overall health of the company).

on limiting global competition, managing increasing costs, and limiting the reparability of their devices.⁷⁴ Through these current practices, companies have determined that they can generate an adequate rate of return on their investments and will continue to pursue their current practices until an external force alters this course.

Therefore, the following sections attempt to expand upon the approaches taken by consumers and manufacturers related to the right to repair, intellectual property considerations implicated by the right to repair, and potential solutions to ease the tension that exists between consumers and device manufacturers.

II. Legal Introduction to the Right to Repair

A. Freedom of Disposition, Restraints on Alienation, and Common Law Considerations

The primary common law doctrine relevant to the right to repair is property law. Although property law frequently relates to real property (i.e., fixed property, commonly in the form of land and buildings), the principles of freedom of disposition and unlawful restraints on alienation seem to apply to the right to repair movement.⁷⁵ The freedom of disposition, a concept cemented in the American law of succession, relates to the fact that “a property owner [has the right] to dispose of his or her property on terms that he or she chooses.”⁷⁶ A parallel can be drawn to the right to repair movement. A consumer, the de facto owner of said device upon purchase, should be permitted to use and ultimately dispose of the property as the consumer chooses. However, due to the codification of certain intellectual property laws, discussed below, and the emergence of restrictive agreements perpetuated by manufacturers, this is unlikely to be the case.

Another related concept is that of restraints on alienation. Like the freedom of disposition, alienation is a concept rooted in property law.⁷⁷ However, parallels exist which are relevant to the right to repair movement. In essence, restraints on alienation are explicit restrictions on

⁷⁴ Perzanowski, *supra* note 29, at 381.

⁷⁵ See generally Robert H. Sitkoff, *Trusts and Estates: Implementing Freedom of Disposition*, 58 ST. LOUIS U. L.J. 643 (2014) (discussing freedom of disposition and unlawful restraints on alienation as they pertain to trusts and estates).

⁷⁶ *Id.* at 644.

⁷⁷ See Cornell L. Sch., *Restraint on Alienation*, LEGAL INFO. INST. (2021) https://www.law.cornell.edu/wex/restraint_on_alienation [<https://perma.cc/SKH8-W3XI>].

future conveyances (i.e., transfers) of real property.⁷⁸ Restraints on alienation have been traditionally disfavored by courts and, as such, are generally only upheld if the restraint is not unreasonable.⁷⁹ An aggrieved farmer could argue that the restraints placed upon these products by equipment manufacturers are in essence restraints on alienation. EULAs, which prohibit certain uses and resale of products, run afoul of these traditional notions of the freedom of disposition and may, by analogy, amount to unreasonable restraints on the alienation of the customer's property.

Even though these may be colorable arguments, courts are unlikely to view this parallel between property law and the right to repair movement as a valid cause of action and, as such, challenges premised upon these notions will likely be unsuccessful in a court of law. Therefore, the following sections will discuss current intellectual property laws and contract considerations related to the right to repair movement.

B. Patent Law Considerations

Patent law in the United States draws its roots directly from the United States Constitution. Article I, Section 8 of the United States Constitution authorizes Congress “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”⁸⁰ Patent law is exclusively under the control and jurisdiction of the United States Federal Government, the provisions of which are codified in 35 U.S.C.⁸¹

Title 35 of the United States Code provides that “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter . . . may obtain a patent therefor.”⁸² As per § 271, patents grant a limited monopoly to the patentee over the invention and prohibit others, without authority from the patentee, from “mak[ing], us[ing], sell[ing], and offer[ing] to sell any patented invention, within the United States” or from importing the patented invention into the United States for the term of the patent.⁸³ Title 35 § 271 is the basis for infringement actions maintained by patentees over alleged infringers.⁸⁴ The current patent system provides for three types of patents; however,

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ U.S. CONST. art. I, § 8, cl. 8.

⁸¹ 28 U.S.C. § 1338(a); *see also* Patent Act, 35 U.S.C. §§ 1–390.

⁸² 35 U.S.C. § 101.

⁸³ 35 U.S.C. § 271(a).

⁸⁴ *See* 35 U.S.C. § 271 (detailing the causes of action for patent infringement).

only two types of these patents, which include utility patents and design patents, are relevant to the discussion of the right to repair.⁸⁵

Although patent protection is not unlimited, the length of protection offered by the grant of a patent is of key significance to both consumers and device manufacturers. The term of a utility patent begins “on the date on which the patent issues and [ends] 20 years . . . from the date on which the earliest such application was filed.”⁸⁶ By contrast, “[p]atents for designs shall be granted for the term of 15 years from the date of grant.”⁸⁷ While similar in structure, the two forms of patents apply somewhat differently. “In general terms, a ‘utility patent’ protects the way an article is used and works, while a ‘design’ patent protects the way an article looks.”⁸⁸ As such, inventors and device manufacturers will seek the greatest protection for their devices; often, these entities will seek utility patents to protect the functionality and design patents to protect the ornamentality of their products.⁸⁹

The United States patent system was “designed to create economic incentives.”⁹⁰ “In exchange for market exclusivity, inventors devote time and capital to developing new technologies. The resulting inventions are then shared with the public”⁹¹ With very few exceptions, the unauthorized use of patented inventions constitutes infringement.⁹² “As a result, patent holders wield considerable power over the manufacture and sale of products embodying their inventions, as well as their use—even for private, non-commercial purposes.”⁹³ However, this limited monopoly does come at a significant cost to manufacturers and inventors. Although the price varies considerably depending on the complexity of the invention and the size of the entity, out-of-pocket expenses, which include attorney fees, for design patents can creep upwards of \$3,500, and out-of-pocket expenses, which also include attorney fees, for utility patents can range anywhere from \$6,000 to in excess of \$45,000.⁹⁴ Based on these numbers, the patent market is evidently big business; due to companies’ investment in research and development and the costs associated with patenting and

⁸⁵ See 35 U.S.C. §§ 161–164 (providing for plant patents).

⁸⁶ 35 U.S.C. § 154(a)(2).

⁸⁷ 35 U.S.C. § 173.

⁸⁸ U.S. PAT. & TRADEMARK OFF., MANUAL OF PATENT EXAMINING PROCEDURE § 1502.01(9th ed. Rev. 07.2022, Feb. 2023).

⁸⁹ See *id.*

⁹⁰ PERZANOWSKI, *supra* note 25, at 124.

⁹¹ *Id.* at 124–25.

⁹² 35 U.S.C. § 271.

⁹³ PERZANOWSKI, *supra* note 25, at 125.

⁹⁴ Vic Lin, *How Much Does a Patent Cost from Start to Finish?*, PAT. TRADEMARK BLOG, <https://www.patenttrademarkblog.com/how-much-patent-costs/>[<https://perma.cc/LYR8-MTR3>].

maintaining these technologies, enforcement is critical. Furthermore, the patent system is a form of social contract, in that the inventors receive a limited monopoly for a set period of time in exchange for making their inventions public and, as such, dedicated to the public following the expiration of the patent term.⁹⁵

A leading case on the right to repair in patent law is *Aro Manufacturing Co., Inc. v. Convertible Top Replacement Co., Inc. (Aro I)*.⁹⁶ In this case, the United States Supreme Court recognized a key distinction related to the rights of a patentee.⁹⁷ In *Aro I*, an action was brought for infringement of a combination patent on a convertible folding top for automobiles.⁹⁸ The Court rearticulated a long-standing doctrine which asserts that the repair of a patented manufacture is permissible, while the reconstruction constitutes infringement.⁹⁹ Additionally, the Court went on to state that “a license to use a patented combination includes the right to ‘preserve its fitness for use so far as it may be affected by wear or breakage’” and relied on a test put forward by Judge Learned Hand that “[t]he [patent] monopolist cannot prevent those to whom he sells from . . . reconditioning articles worn by use, unless they in fact make a new article.”¹⁰⁰

Many years later in 2008, the Supreme Court took up another issue related to patent infringement in *Quanta Computer, Inc. v. LG Electronics, Inc.*¹⁰¹ In this case, the Court analyzed the longstanding “doctrine of patent exhaustion [which] limit[s] the patent rights that survive the initial authorized sale of a patented item.”¹⁰² The doctrine of patent exhaustion “provides that the initial authorized sale of a patented item terminates all patent rights to that item” and is similar to copyright exhaustion, as

⁹⁵ See generally Gary S. Shuster, *If a Patent is Expired, Can it be Used Freely by Everybody?*, COLEMAN & HOROWITT, LLP (Mar. 12, 2019), <https://ch-law.com/if-a-patent-is-expired-can-it-be-used-freely-by-everybody/> [<https://perma.cc/P8HY-YVBA>] (discussing public domain, terminal disclaimers, and rights afforded to the public after expiration of a patent term).

⁹⁶ See generally *Aro Mfg. Co. v. Convertible Top Replacement Co. (Aro I)*, 365 U.S. 336 (1961) (discussing whether the replacement of the fabric on a convertible folding top was infringing on the convertible folding top patent).

⁹⁷ *Id.* at 338–39.

⁹⁸ *Id.*

⁹⁹ *Id.* at 342 (citing *Wilson v. Simpson*, 50 U.S. 109, 123 (1850)).

¹⁰⁰ *Id.* at 343, 345–46 (first quoting *Leeds & Catlin Co. v. Victor Talking Mach. Co.*, 213 U.S. 325, 336 (1909); then quoting *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 425 (2d Cir. 1945)).

¹⁰¹ See generally *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008) (examining the applicability of the patent exhaustion doctrine to the sale of individual components of a patented system that must be combined with other components in order to practice the patented methods).

¹⁰² *Id.* at 621.

embodied in the first sale doctrine, which is codified at 17 U.S.C. § 109.¹⁰³ In sum, the holding of the Court reaffirmed that “the personal property rights of the owner of the physical product trump the intellectual property rights of the patent holder.”¹⁰⁴

Finally, in 2017, the Supreme Court, in its decision of *Impression Products, Inc. v. Lexmark International, Inc.*, reevaluated the exhaustion doctrine as it relates to the rights of a patentee post-sale.¹⁰⁵ The Court held that “[a] patentee’s decision to sell a product exhausts all of its patent rights in that item, regardless of any restrictions the patentee purports to impose. . . .”¹⁰⁶ Therefore, even if the terms of a patentee’s contract with a customer are “clear and enforceable under contract law, . . . they do not entitle Lexmark [as patentee] to retain patent rights in an item that it has elected to sell.”¹⁰⁷ Furthermore, the

exhaustion rule marks the point where patent rights yield to the common law principle against restraints on alienation. The Patent Act “promote[s] the progress of science and the useful arts by granting to [inventors] a limited monopoly” that allows them to “secure the financial rewards” for their inventions. . . . [O]nce a patentee sells an item, it has “enjoyed all the rights secured” by that limited monopoly. Because “the purpose of the patent law is fulfilled . . . when the patentee has received his reward for the use of his invention,” that law furnishes “no basis for restraining the use and enjoyment of the thing sold.”¹⁰⁸

The *Lexmark* decision reaffirmed the “centuries-old principle” of the exhaustion doctrine and “recognized an inherent right to repair.”¹⁰⁹ However, companies have continued their practices of restrictive contracts and license agreements despite these Court decisions, and device manufacturers continually rely on their market power and rights in replacement parts to “starve repair providers of the replacement parts

¹⁰³ *Id.* at 625; *see also* 17 U.S.C. § 109.

¹⁰⁴ PERZANOWSKI, *supra* note 25, at 126.

¹⁰⁵ *See generally* *Impression Prods., Inc. v. Lexmark Int’l, Inc.*, 581 U.S. 360 (2017) (deciding whether a “a patentee that sells an item under an express restriction on the purchaser’s right to reuse or resell the product may enforce that restriction through an infringement lawsuit”).

¹⁰⁶ *Id.* at 366.

¹⁰⁷ *Id.* at 370.

¹⁰⁸ *Id.* at 370–71 (first quoting *U.S. Univis Lens Co.*, 316 U.S. 241, 250 (1942); then quoting *Keeler v. Standard Folding Bed, Co.*, 157 U.S. 659 (1895); and then quoting *Univis Lens Co.*, 316 U.S. at 251).

¹⁰⁹ PERZANOWSKI, *supra* note 25, at 126.; *see also* cases cited *supra* note 109.

essential to their services” or charge exorbitant prices that discourage third-party repairs.¹¹⁰

Design patents may also enable sellers to limit repairs on their products. To prove infringement of a design patent, a patentee “must show that ‘an ordinary observer, taking into account the prior art, would believe the [defendant’s] design to be the same as the patented design.’”¹¹¹ Modern trends in the United States Patent and Trademark Office (“USPTO”) have seen an uptick in design patent grants, and the progressively broadened scope of these design patents have allowed patentees to protect external and internal components as ornamental.¹¹² This recent shift is ever-present in the automotive industry, wherein manufacturers have been successful in securing design patent protection for otherwise functional equipment like headlights, turn signals, and bumpers.¹¹³ Therefore, patentees “have the power to deny . . . parts to owners and repair providers, to charge unreasonably high prices, or to condition access to parts on other onerous terms” based on the rights afforded to design patentees.¹¹⁴

Despite the decisions by the Courts related to the exhaustion doctrine, the implicit right to repair, and the repair versus reconstruction dichotomy, patentees still maintain the ability to condition access to their products and prevent consumers from manipulating the products post-sale.

C. Copyright Law Considerations

Much like patent law, copyright law draws its roots directly from Article I, Section 8, of the United States Constitution.¹¹⁵ Per 17 U.S.C. § 102(a), “[c]opyright protection subsists . . . in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”¹¹⁶ Unlike patent law, copyright law, in select instances, and trademark law, discussed in more detail below,¹¹⁷ appear in two aspects: common law and statutory law. The instant an original work of authorship is fixed in a

¹¹⁰ Perzanowski, *supra* note 29, at 372.

¹¹¹ PERZANOWSKI, *supra* note 25, at 133 (quoting *Egyptian Goddess, Inc. v. Swisa, Inc.*, 543 F.3d 665, 682 (Fed. Cir. 2008)).

¹¹² PERZANOWSKI, *supra* note 25, at 138–39.

¹¹³ *See id.*

¹¹⁴ *Id.* at 134.

¹¹⁵ U.S. CONST art. I, § 8, cl. 8.

¹¹⁶ 17 U.S.C. § 102(a).

¹¹⁷ *See* discussion *infra* Section II.D.

tangible medium, a common law copyright is created.¹¹⁸ The rights afforded to the author are limited under common law, but these rights do provide for several causes of action related to infringement.¹¹⁹ However, many of these common law considerations were preempted in 1976 with the enactment of the Copyright Act of 1976; now, to receive the breadth of copyright protection, an author will likely register their work(s) with the United States Copyright Office in accordance with 17 U.S.C. § 412.¹²⁰

Although registration is not required under the current copyright framework of the United States, registration offers several additional protections to the author, primarily the ability to maintain an infringement action against an alleged infringer in federal courts under 17 U.S.C. § 501.¹²¹ Furthermore, both common and statutory law copyright protections prevent consumers from reproducing the works, preparing derivative works, and distributing copies of the works to the public by sale or other transfer of ownership.¹²²

As enumerated in 17 U.S.C. § 102, copyright protection is afforded to numerous types of authorship.¹²³ As it relates to equipment manufacturers, software code and manuals qualify for copyright protection under 17 U.S.C. § 102(a)(1) as literary works.¹²⁴ A U.S. copyright generally “endures for a term consisting of the life of the author and 70 years after the author’s death.”¹²⁵ However, in the case of corporate copyrights emanating from works for hire, “the copyright endures for a term of 95 years from the year of its first publication, or a term of 120 years from the year of its creation, whichever expires first.”¹²⁶ Therefore, for all practical purposes, a copyright on software and manuals lasts well past the useful life of the device itself. In the modern era, device manufacturers consistently assert copyright protection over part numbers, repair manuals, software code, and the like.¹²⁷

In 1998, Congress enacted the Digital Millennium Copyright Act (“DMCA”), which added 17 U.S.C. § 1201, forbidding the circumvention of technological protections applied to works protected under copyright.¹²⁸ In essence, the DMCA “makes it illegal to circumvent DRM

¹¹⁸ *Id.* § 301.

¹¹⁹ *Id.*

¹²⁰ *See id.* § 412.

¹²¹ *See id.* § 501(b).

¹²² *See id.* § 106.

¹²³ *See id.* § 102(a)(1)–(8).

¹²⁴ *Id.* § 102(a).

¹²⁵ *Id.* § 302(a).

¹²⁶ *Id.* § 302(c).

¹²⁷ *See generally* PERZANOWSKI, *supra* note 25 (describing the ways device manufacturers use copyright protections to assert control over various aspects of the repair process).

¹²⁸ 17 U.S.C. § 1201.

[Digital Rights Management] or traffic in tools that enable circumvention.”¹²⁹ Although intended to thwart the pirating of CDs and DVDs, the inherent ambiguity contained within the DMCA has been exploited by device manufacturers in their fight to limit the right to repair.¹³⁰

Forbidden by these anti-circumvention protections in the DMCA, access to copyrighted works are restricted by DRM and other technological protection measures (“TPMs”).¹³¹ “Device makers routinely use TPMs to limit access to the software code that control devices . . . [t]hat code is often necessary to diagnose and repair devices.”¹³² Device makers, like John Deere, go as far as to use proprietary software tools to authenticate and calibrate replacement parts, making it nearly impossible to diagnose the problem and use third party parts to repair the equipment without creating several counts of copyright infringement liability.¹³³

However, several exceptions exist to pierce the dense layer of copyright protection provided to device manufacturers. To begin, copyright protection “extends only to an author’s unique expression of an idea, not the underlying idea itself.”¹³⁴ Additionally, copyright law only protects creative elements and, as such, excludes protection for functional components of the article.¹³⁵ In addition to these basic constraints on copyrightability, the Librarian of Congress has adopted exceptions to the provisions of the DMCA several times since its enactment to allow consumers the ability to repair certain software-embedded devices without committing copyright infringement.¹³⁶

While narrow in scope, these exemptions provide a glimmer of hope to right to repair advocates. However, the glimmer of hope is somewhat shadowed by the framework of the DMCA; § 1201 provides permanent exemptions which permit TPM circumvention, but these exemptions only apply in specific cases related to non-profits, museums, education, and law enforcement.¹³⁷ Further, the DMCA provides the possibility for enactment of temporary exemptions.¹³⁸ However, these exemptions may only be renewed every three years, require an onerous requesting procedure, and may be denied by the overseeing federal

¹²⁹ Moore, *supra* note 8, at 512.

¹³⁰ See Montello, *supra* note 22, at 168.

¹³¹ Perzanowski, *supra* note 29, at 370.

¹³² *Id.* at 370–71.

¹³³ *Id.* at 371–72.

¹³⁴ PERZANOWSKI, *supra* note 25, at 112.

¹³⁵ *Id.*

¹³⁶ See Montello, *supra* note 22, at 168.

¹³⁷ 17 U.S.C. § 1201.

¹³⁸ *Id.*

agencies.¹³⁹ Lastly, these exemptions, whether permanent or temporary, do not compel manufacturers to “provide repairers access to manuals, parts, or software tools to circumvent these restrictions for the purpose of repair.”¹⁴⁰

The final protections offered to shield a consumer from infringement liability of copyrighted works are the first sale doctrine, codified at 17 U.S.C. § 109, and fair use exceptions, codified at 17 U.S.C. § 107.¹⁴¹ The first sale doctrine in copyright law is the complement to the exhaustion principle of patent law. Essentially, once the copyright owner places the work in the stream of commerce, the owner exhausts its exclusive statutory right to control its distribution.¹⁴² Additionally, the fair use exceptions allow for the unlicensed use of copyright-protected works in certain circumstances like scholarship, research, criticism, and teaching.¹⁴³ When taken together, these two statutory protections lay the framework to create an implicit right to repair in some copyright-protected media.¹⁴⁴ However, both are exceptions and taking advantage of them will likely prove an uphill battle for consumers, especially small, independent repairers.

D. Trademark Law Considerations

Unlike patent law and copyright law, trademark law in the United States does not explicitly find its origin in the United States Constitution. Trademark law protections date back to at least ancient Greece and have found their way into American jurisprudence through the Commerce Clause.¹⁴⁵

Traditionally, trademarks were affixed to products made by craftsmen, guilds, and artisans to “guarantee the quality of the goods as well as identify the manufacturer.”¹⁴⁶ In essence, trademark law has developed to protect consumers from confusion and protect mark holders

¹³⁹ *Id.*

¹⁴⁰ Montello, *supra* note 22, at 168.

¹⁴¹ See 17 U.S.C. §§ 109, 107.

¹⁴² *Quality King Distributors, Inc. v. L'anza Research International, Inc.*, 523 U.S. 135, 152 (1998).

¹⁴³ 17 U.S.C. § 107.

¹⁴⁴ See generally PERZANOWSKI, *supra* note 25, at 152 (describing legality of resale markets and connection to right to repair).

¹⁴⁵ U.S. CONST. art. I, § 8, cl. 3; see *A Brief History of Trademarks*, THE L. OFFS. OFFICES OF KONRAD SHERINIAN (2021), <https://sherinianlaw.net/intellectual-property-law/trademarks/a-brief-history-of-trademarks/> [<https://perma.cc/K62L-AC24>].

¹⁴⁶ THE L. OFFS. OF KONRAD SHERINIAN, *supra* note 146.

from deceptive reproductions, fraud, and unfair competition in the marketplace.¹⁴⁷

Today, trademark protections exist in two forms: common law and statutory protections.¹⁴⁸ Like common law copyrights, common law trademarks provide for several causes of action related to infringement, which are found within the Lanham Act, specifically, § 43(a).¹⁴⁹ Furthermore, persons may also secure either or both state and federal registrations for their marks.¹⁵⁰ While issues of federal preemption may arise in specific instances, state and federal statutory protections help in providing a seemingly impenetrable blanket of protection to mark holders.¹⁵¹

Mark holders may register their marks with the USPTO and upon registration are provided with continuous protection of the mark, subject to the conditions of its continued use of the mark in commerce and payment of maintenance fees.¹⁵² Additionally, registration of marks with the USPTO affords mark holders additional means of protection in the form of maintaining infringement actions in federal courts under 15 U.S.C. § 1114.¹⁵³

In contrast to patent and copyright protections, trademark protections do not serve a primary purpose of “provid[ing] economic incentives for creative or innovative products. Instead, [they] serve[] two other purposes—promoting fair competition and protecting consumers from unscrupulous sellers.”¹⁵⁴ With that being said, device manufacturers also rely on trademark protection (i.e., protection for a recognizable identifier of a good or service) and trade dress protection (i.e., protection for the design and/or shape of materials used in the packaging of goods) to limit a consumer’s right to repair.¹⁵⁵ Manufacturers have been successful in securing trademarks affixed to their products and have claimed trade dress protection for “iconic” (i.e., distinctive) features of their products

¹⁴⁷ 15 U.S.C. § 1127.

¹⁴⁸ Josh Gerben, *An Overview of Common Law Trademark Rights*, GERBEN TRADEMARK BLOG (2020), <https://www.gerbenlaw.com/blog/an-overview-of-common-law-trademark-rights/> [<https://perma.cc/42P3-Z7HL>].

¹⁴⁹ 15 U.S.C. § 1125(a).

¹⁵⁰ *Why Register Your Trademark?*, U.S. PAT. AND TRADEMARK OFF., <https://www.uspto.gov/trademarks/basics/why-register-your-trademark> [<https://perma.cc/WV2U-BBK6>].

¹⁵¹ *Id.*

¹⁵² 15 U.S.C. § 1051.

¹⁵³ 15 U.S.C. § 1114.

¹⁵⁴ PERZANOWSKI, *supra* note 25, at 144.

¹⁵⁵ Brandon Selinsky, *What is the Difference Between Trademark and Trade Dress?*, WHITCOMB SELINSKY PC (Dec. 14, 2021), <https://www.whitcomblawpc.com/business-law-blog/trademark-trade-dress> [<https://perma.cc/W3FJ-FUDC>] *jdress*.

and product packaging.¹⁵⁶ Although trademarks cannot protect functional features of components, manufacturers have largely been able to avoid this issue by instead claiming trade dress protection on how these functional or semi-functional components look.¹⁵⁷ Therefore, even if trademark protection is not available, trade dress protection permits a device manufacturer to assert protection over the way in which the goods are packaged, presented to the consumer, or encountered in the marketplace.¹⁵⁸

Because trademark protection lasts *ad infinitum*, so long as the mark owner continues to use it in commerce, the mark does not fall trap to genericide, and for registered marks, if the appropriate maintenance fees are paid, manufacturers have determined that when they affix their marks to OEM or replacement parts, they can prevent the unauthorized use of their marked products by others.¹⁵⁹ Furthermore, the mark owners can prohibit repairers from using the marked products in addition to thwarting competitive look-alike parts from entering the United States under trade dress protection.¹⁶⁰

Lastly, several manufacturers use trademark law “to prevent the importation of replacement parts that contain manufacturer’s trademarks or appear similar to the part that is registered as a trademark.”¹⁶¹ “Since repair providers often cannot acquire parts directly from device makers, they are forced to rely on the gray market” to acquire the requisite repair parts.¹⁶² “A grey market is created by the unauthorized importation of legitimately trademarked goods which enter the United States against the wishes of the domestic trademark owner.”¹⁶³ “In order to invoke trademark law to clamp down on the grey market”, some companies, like Apple, “include[] its logo on internal parts like batteries, processors, and cables. Most consumers never set eyes on these internal components and almost certainly don’t take notice of the logos, some no bigger than a grain of rice.”¹⁶⁴

Since U.S. trademark law affords broad rights to mark holders, companies “rely on the ambiguous origins of some gray market goods to seize lawful parts imported by repair providers” through nonjudicial

¹⁵⁶ Grinvald & Tur-Sinai, *supra* note 17, at 116.

¹⁵⁷ PERZANOWSKI, *supra* note 25, at 148.

¹⁵⁸ See Selinsky, *supra* note 156.

¹⁵⁹ See generally Perzanowski, *supra* note 29, at 373–74 (discussing trademark protection of nonfunctional parts and use of trademark law to seize imported parts).

¹⁶⁰ 15 U.S.C. § 1058; Grinvald & Tur-Sinai, *supra* note 17, at 117.

¹⁶¹ Grinvald & Tur-Sinai, *supra* note 17, at 117.

¹⁶² Perzanowski, *supra* note 29, at 374.

¹⁶³ Lars H. Liebler, *Trademark Law, Economics and Grey-Market Policy*, 62 IND. L.J. 753, 753 (1987).

¹⁶⁴ Perzanowski, *supra* note 29, at 374.

processes.¹⁶⁵ Therefore, companies can maintain dominion over the entire repair market via control of trademarked replacement parts.¹⁶⁶ Furthermore, these companies ensure that only authorized repairers (i.e., repairers within the company's approved network or a subsidiary of the company itself) have access to the necessary parts by restricting access to the parts both domestically and internationally.¹⁶⁷

However, exceptions and carveouts do exist to protect consumers and ensure that these limited and de facto monopolies do not exist unfettered.¹⁶⁸ To begin, the resale of authentic (i.e., genuine) goods bearing registered marks is generally lawful under the first sale doctrine.¹⁶⁹ However, unlike copyright law, which codifies the first sale doctrine in "17 U.S.C. § 109, the Lanham Act includes no explicit 'first sale' defense."¹⁷⁰ In general, the fair use defense is applicable to resellers of goods that bear a registered mark, so long as the refurbished parts do not mislead consumers into thinking they are new and original.¹⁷¹ This means that qualifying refurbished goods are not considered "counterfeits" and are able to be sold in commerce without violating the Lanham Act.¹⁷² However, this is not the whole story. If the product bearing the mark cannot be repaired due to the unavailable nature of proprietary repair tools, repair manuals, and the like, the refurbishing and repair of that product is likely impracticable or impossible.

Gray market goods, which are goods manufactured by or with the permission of the trademark owner and intended for sale outside the United States, bear authentic trademarks but enter the United States through unauthorized distribution channels.¹⁷³ While gray market goods are indeed genuine and the sale of these trademarked goods are legal, Titles 15 and 19 of the United States Code all but prohibit the importation of such goods into the United States.¹⁷⁴ If the trademarked goods enter the United States through unauthorized distribution channels, 15 U.S.C. § 1124 bars admission of these goods at any customhouse of the United

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ *See id.*

¹⁶⁸ *Id.*

¹⁶⁹ *See* Grinvald & Tur-Sinai, *supra* note 17, at 75

¹⁷⁰ GRAEME B. DINWOODIE & MARK D. JANIS, TRADEMARKS AND UNFAIR COMPETITION: LAW AND POLICY 818 (5th ed. 2018).

¹⁷¹ Grinvald & Tur-Sinai, *supra* note 17, at 118; *see* Champion Spark Plug Co. v. Sanders, 331 U.S. 125, 130–31 (1947).

¹⁷² Grinvald & Tur-Sinai, *supra* note 17, at 118.

¹⁷³ David A. Piedra, *Section 42 of the Lanham Act and Non-Genuine Gray Market Goods: Re-Evaluating the Affiliate Exception*, 13 FORDHAM INT'L L. REV. 680, 681 (1989).

¹⁷⁴ *See* 15 U.S.C. § 1124; *see also* 19 U.S.C. § 1526.

States and 19 U.S.C. § 1526(b) authorizes the seizure of these goods.¹⁷⁵ Therefore, even if the gray market goods were legally acquired and the sale is authorized in countries other than the United States, resellers are unable to sell them within the United States without authorization or prior approval of the manufacturer.¹⁷⁶

Despite these limited exceptions, companies still rely upon trademark and import control laws to thwart the importation and proliferation of refurbished original parts, replacement parts, and gray market goods with some degree of success.¹⁷⁷

E. Contract Law Considerations

Device manufacturers do not rely exclusively on intellectual property protections to snuff out the repair of their products. Contract law plays a significant role in this scheme, primarily in the forms of license agreements and terms of service.¹⁷⁸ While exceptions in intellectual property law sometimes prevent device manufacturers from exerting control over their products after a first sale or an initial use in commerce, contracts provide a more malleable structure for device manufacturers to exert post-sale control.¹⁷⁹

Restrictive licensing comes in many forms including: (1) EULAs; (2) licensing of proprietary information; and (3) granting licenses exclusively to repair facilities in a company's authorized network.¹⁸⁰ EULAs are "a type of 'contract[] between software publishers and end users, which govern[s] the end user's right to use software,' and are thus extremely important as they prescribe what consumers may and may not do with the product."¹⁸¹ For example, "[t]he John Deere EULA, which farmers are required to sign, 'forbids nearly all repair and modification to farming equipment.'"¹⁸² Because of these restrictive agreements, consumers are essentially barred from modifying their equipment on their own and, as such, must make use of the avenues put in place by the device

¹⁷⁵ 19 U.S.C. § 1526(b); 15 U.S.C. § 1124.

¹⁷⁶ Liebler, *supra* note 164, at 757.

¹⁷⁷ Grinvald & Tur-Sinai, *supra* note 17, at 118–19.

¹⁷⁸ Perzanowski, *supra* note 29, at 370.

¹⁷⁹ *See id.*

¹⁸⁰ *See* Nicholas A. Mirr, *Defending the Right to Repair: An Argument for Federal Legislation Guaranteeing the Right to Repair*, 105 IOWA L. REV. 2393, 2397–98 (2020); *see also* Michael L. Rustad, *Software Licensing: Principles and Practical Strategies* 619–620 (Suffolk Univ. L. Sch., Research Paper 10-49, 2010) (describing EULAs and anti-transfer provisions), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1675057 [<https://perma.cc/7QTY-FMEM?type=standard>].

¹⁸¹ Mirr, *supra* note 181, at 2397.

¹⁸² *Id.*

manufacturers to see that their equipment is repaired.¹⁸³ Through this scheme, the manufacturers are put in a place of near total control. The manufacturers have the ability to authorize or deny repair services to the consumer.¹⁸⁴ If the manufacturer does not provide the requisite tools or knowledge to repair the devices and chooses not to create avenues for authorized repair, the manufacturers effectively can force consumers to replace the part in its entirety or ultimately render the entire product inoperable, forcing the consumer to either upgrade the equipment or purchase a new piece of equipment to meet their needs.¹⁸⁵

As stated by Professors Grinvald and Tur-Sinai,

[o]ne possible way to deal with this is to look to certain contract law doctrines to strike down restrictions on repair, particularly when the contract at hand is a standard form contract, involving parties of unequal bargaining power, rather than an agreement between commercial parties dealing at arm's length. Among such doctrines, the public policy exception to contract enforcement or the unconscionability doctrine may prove particularly relevant. The downside to simply relying on these doctrines is that there is a great uncertainty involved in their application, which leaves consumers exposed to potential liability. Moreover, in order to invalidate a contract, a consumer would need to be prepared to dispute the terms.¹⁸⁶

Consumers are undoubtedly placed in a difficult position. They have unequal bargaining power with the manufacturers and effectively rely on the finite number of manufacturers to produce and supply required equipment.¹⁸⁷

Because nearly all consumers fall in line with the circumstances outlined above, they are left with few to no options. They can choose to either purchase old and outdated equipment in an attempt to meet their needs or succumb to the restrictive licensing practices of modern device manufacturers. In the competitive world, the former option is likely not an option at all. As such, consumers are essentially forced to purchase the new equipment and yield to the terms of the EULAs and TOSs in order to meet their modern needs.¹⁸⁸

¹⁸³ *See id.*

¹⁸⁴ *Id.*

¹⁸⁵ Montello, *supra* note 22, at 170.

¹⁸⁶ Grinvald & Tur-Sinai, *supra* note 17, at 102 (citations omitted).

¹⁸⁷ *See id.*

¹⁸⁸ *See id.* at 101–02.

III. Agriculture and the Right to Repair

A. Introduction

The John Deere brand is classic Americana and has been one of the most prominent names in agriculture since its founding. Most individuals, despite never having laid a hand on a tractor or piece of farming equipment, can readily identify the iconic green and yellow as part of the John Deere brand.

However, Deere & Company (“Deere”) is not the only manufacturer of farming equipment.¹⁸⁹ As of 2022, there are 1,191 tractor and agriculture machinery manufacturing businesses in the United States.¹⁹⁰ However, over the last forty years, the agriculture industry has been dominated by a few key market players who have focused on consolidation, eliminating small and independent manufacturers, and establishing unfathomable brand loyalty.¹⁹¹

In addition to their domination of the manufacturing sub-sector, many of these same companies have taken a similar approach to repair facilities, repair services, and dealerships.¹⁹² For example, as of 2022, the state of Montana has only three Deere dealerships remaining when compared to around thirty dealerships only two decades earlier.¹⁹³ Rising prices of equipment and supplies, the COVID-19 pandemic, and the extreme market power of large agriculture companies have effectively eliminated meaningful competition in the marketplace to include local, mom-and-pop manufacturers, dealerships, and repair shops of old.¹⁹⁴ With John Deere “controlling about 50% of the North American large tractor

¹⁸⁹ See *Industry Research Report 33311, Tractors & Agriculture Machinery Manufacturing in the US*, IBISWORLD, Jan. 2023.

¹⁹⁰ *Id.*

¹⁹¹ See generally Bianca Flowers, *Fewer U.S. Tractor Dealerships Raise Costs for Farmers as Sector Consolidates*, REUTERS (Sept. 1, 2022, 11:04 AM04AM) (arguing that the lack of competition between equipment dealers has increased the operation costs of US farmers), <https://www.reuters.com/markets/us/fewer-us-tractor-dealerships-raise-costs-farmers-sector-consolidates-2022-09-01/> [<https://perma.cc/XC7E-ZT9M>]; David Kanicki, *Brand Loyalty Part 4: John Deere: Still the Brand to Beat*, FARM EQUIP. (Sept. 2, 2017) (noting the increase in brand loyalty towards major manufacturers in the agricultural market), <https://www.farm-equipment.com/articles/14501-brand-loyalty-part-4-john-deere-still-the-brand-to-beat> [<https://perma.cc/MX5R-RBKX>].

¹⁹² Flowers, *supra* note 192.

¹⁹³ *Id.*

¹⁹⁴ See *id.*

and combine market,” a 68 billion dollar market in 2022, the scope of the issue may be better appreciated.¹⁹⁵

The lack of dealerships essentially presents two options for farmers: either (1) travel great distances to seek repair of their machines at authorized dealerships; or (2) pay to have authorized technicians travel to their farms, evaluate the machinery, and perform the repairs.¹⁹⁶ The former option often requires loading the heavy farming equipment onto trailers and towing it to repair facilities, resulting in a loss of operating time and immense costs associated with towing and transporting equipment.¹⁹⁷ However, in some instances, farming equipment is either too heavy or too wide to carry by road without special permits and licensing (i.e., wide load permits and commercial driver’s licenses).¹⁹⁸ Therefore, farmers must rely on the latter option. With this option, farmers must follow the artificial monopoly of authorized repair services offered by John Deere. For instance, a farmer may choose to contact a certified John Deere technician for the price of \$130 per hour, purchase additional software and code reading technology from John Deere at an annual starting price of \$1,200, purchase a Customer Service Advisor-Ag and Turf subscription for \$2,400 per year per location, or attempt to circumvent the DRM controls put in place by the manufacturer, risking copyright infringement suits.¹⁹⁹

On first blush, it appears as though farmers have many options at their disposal. However, when factors like cost, time, parts, and availability are evaluated, farmers likely have few actual options.²⁰⁰ Farmers can transport their machinery to authorized repair facilities, pay for authorized technicians to travel to their farms, or risk legal action for copyright

¹⁹⁵ See Donnelle Eller, *Iowa U.S. Farm Groups File a Federal Right to Repair Complaint Against Deere to Fix Their Own Tractors*, DES MOINES REG. (Mar. 3, 2022 03 AM), <https://www.desmoinesregister.com/story/money/agriculture/2022/03/03/iowa-u-s-farmers-seek-probe-over-right-repair-deere-tractors-combines-farm-equipment-agriculture/9356985002/> [https://perma.cc/GN5N-NT3N].

¹⁹⁶ Jason Koebler, *Tractor-Hacking Farmers are Leading a Revolt Against Big Tech’s Repair Monopolies*, VICE (Feb. 14, 2018, 2:31 PM), <https://www.vice.com/en/article/kzp7ny/tractor-hacking-right-to-repair> [https://perma.cc/G4Y3-2L5D].

¹⁹⁷ *Id.*

¹⁹⁸ *See id.*

¹⁹⁹ Jason Koebler, *Why American Farmers are Hacking Their Tractors with Ukrainian Firmware*, VICE (Mar. 21, 2017, 4:17PM) (noting the cost of service from a Deere technician) <https://www.vice.com/en/article/xykkkd/why-american-farmers-are-hacking-their-tractors-with-ukrainian-firmware> [https://perma.cc/ZUC5-BGGV]; Lessiter, *supra* note 4; Shea Swenson, *John Deere to Sell Diagnostic Software Directly to Farmers*, MODERN FARMER (Mar. 25, 2022) (identifying the costs of Deere’s Customer Service ADVISOR), <https://modernfarmer.com/2022/03/john-deere-to-sell-diagnostic-software/> [https://perma.cc/WBX9-FVTM]./.

²⁰⁰ *See* Koebler, *supra* note 200.

infringement.²⁰¹ None of these options are that appealing to farmers who often cannot tolerate the downtime of their machinery, cannot afford authorized repair services and technicians, or do not want to risk being sued in federal court by one of the largest companies in the world.

B. John Deere and the Right to Repair

Despite the allegations against Deere regarding restricting the right to repair, the company maintains that “we’re committed to keeping your machines up and running when you need them most.”²⁰² Furthermore, Deere goes on to state that “[w]e also know you want to repair your own equipment in your own shop, and on your own time. That’s why Deere makes it easy for you to work on your machine’s parts and systems.”²⁰³

Deere’s statements appear on an entire page on its corporate website dedicated to self-repair.²⁰⁴ The webpage touts an available-for-purchase diagnostic service tool known as the Customer Service ADVISOR, “the most responsive dealer network in the industry,” and eight catalogued sub-sections for “tools & resources to keep you running.”²⁰⁵ On the surface, Deere appears to provide customers with all of the tools and knowledge necessary to work on its products. However, this is again not the full story. Deere goes on to state that it does not “support customers modifying embedded software in our equipment [about 2% of the machine]. Doing so creates risks related to safe operation of the machine, emissions compliance, engine performance, data security, warranty validation, and resale value.”²⁰⁶

In their various TOSs, protection plans, and repair plans, Deere maintains that all warranty-related repairs and maintenance of covered components “must be performed by an authorized John Deere dealer using genuine John Deere parts,” “[a]ll repairs must be authorized by the Administrator [Deere] prior to performance of work,” and, in the event that modification or alteration of equipment not approved by Deere is done or “[s]ervice or repair . . . is performed by someone other than an

²⁰¹ *Id.* at 3.

²⁰² *Repair Made Easy*, DEERE & CO., <https://www.deere.com/en/our-company/repair/> [<https://perma.cc/S4MZ-229A>].

²⁰³ *Id.*

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ *Id.*

authorized John Deere dealer,” the warranty, protection plan, or repair plan “terminate[s] immediately.”²⁰⁷

So, the truth of the matter is that Deere allows customers to repair their products so long as customers do not modify imbedded software, customers utilize approved Deere repair services, and both technicians and customers pay for additional add-on services when maintenance, repair, and diagnostics are required.²⁰⁸

C. Current and Pending Lawsuits against John Deere Related to the Right to Repair

Based on the positions taken by Deere, it is evident why the company has been a primary target of right to repair litigation. As of March 22, 2022, ten suits have been filed against Deere in the U.S. District Court for the District of Northern Illinois, one complaint has been filed with the FTC, and countless suits have been filed in state courts.²⁰⁹ Primarily, the complaints allege that Deere “deliberately monopolize[s]” the market for repair and maintenance services for their equipment, Deere’s actions violate the Sherman Antitrust Act, and Deere “deliberately engages in unfair and deceptive trade practice[s] by withholding the information and parts from equipment owners and small repair shops.”²¹⁰

At the time of drafting this Article, little information is available as to the status of these suits.²¹¹ Furthermore, Deere has not released information regarding settlements and has declined to comment on pending litigation.²¹² However, Deere has responded to several inquiries

²⁰⁷ DEERE & CO., JOHN DEERE MECHANICAL REPAIR PLAN 1-2 (Apr. 16, 2023), https://www.deere.com/assets/pdfs/common/parts-and-service/warranty-protection-plans/pppr_comprehensive_29f9ab4d48d7f6aed9b6652a4d42411fdc836edd.pdf [<https://perma.cc/TYR9-UZYF>]; DEERE & CO., JOHN DEERE POWERGARD PROTECTION PLAN RESIDENTIAL 2 (Apr. 16, 2023), https://www.deere.com/assets/pdfs/common/parts-and-service/warranty-protection-plans/pppr_limited_de6453f85045d5890ccf0b71b7e8fd14bc9fe50a.pdf [<https://perma.cc/CT8U-DWAQ>].

²⁰⁸ See DEERE & CO., *supra* note 2 (prohibiting users from copying or modifying licensed materials).

²⁰⁹ See ONGOING COVERAGE: *Right-to-Repair Impact on Dealers, Deere, Other OEMs FARM EQUIPMENT*, (Mar. 24, 2022) (noting the number of active lawsuits against John Deere Co.), <https://www.farm-equipment.com/articles/20002-deere-hit-with-class-action-lawsuit-over-right-to-repair> [<https://perma.cc/GR8Y-MDGX>].

²¹⁰ *Id.*; Elaine S. Povich, *Farmers File Federal Complaint Over Right to Repair Equipment*, STATELINE (Mar. 3, 2022), <https://stateline.org/2022/03/03/farmers-file-federal-complaint-over-right-to-repair-equipment/> [<https://perma.cc/6EZY-WS3V>].

²¹¹ See ONGOING COVERAGE: *Right-to-Repair Impact on Dealers, Deere, Other OEMs, supra* note 210.

²¹² *Id.*

related to the right to repair, maintaining their commitment to “customer’s right to safely maintain, diagnose, and repair their equipment.”²¹³

IV. Federal and State Law Considerations

A. State Law Approach to Right to Repair

Massachusetts, in 2012, was the first state to enact right to repair legislation.²¹⁴ Although this state law exclusively applied to Massachusetts, it laid the groundwork for other states to join the conversation. In 2014, the Repair Association, an organization spearheading the consumer-based right to repair movement, put forward model legislation aimed at broadening the scope of state law consumer protections and facilitating right to repair within the states.²¹⁵ Since the creation of the model legislation, thirty-four states “have begun working on Right to Repair legislation.”²¹⁶

In general, these proposals seek to amend current state laws regarding general business law, protections of consumers from unfair and deceptive practices, and empower the respective state attorney generals to enforce the laws and to issue fines.²¹⁷ To date, the Repair Association has proven instrumental in promoting exemptions to the DMCA, engaging with the FTC to issue warnings against automobile manufacturers in violation of the Magnuson-Moss Warranty Act, and providing information for amicus briefs to the Supreme Court of the United States.²¹⁸

A primary goal of the Repair Association is to amend current state contract laws focused on protecting consumers from unfair and deceptive acts and practices.²¹⁹ Instead of targeting the products of device manufacturers directly, the model legislation seeks to promote arms-length bargaining between the consumers and manufacturers while also “limit[ing] the damage done by unfair and deceptive contracts.”²²⁰

Additionally, the model legislation seeks to promote the availability of “any documentation, parts, and tools, required for the diagnosis, maintenance, or repair of such digital electronic equipment”

²¹³ Tyne Morgan, *AEM, John Deere Respond to Biden’s Planned Executive Order Over Right to Repair Equipment*, AG WEB FARM J. (July 7, 2021), <https://www.agweb.com/news/policy/politics/aem-john-deere-respond-bidens-planned-executive-order-over-right-repair> [<https://perma.cc/P3LW-9XXT>].

²¹⁴ Wiens, *supra* note 34.

²¹⁵ Mark, *supra* note 13, at 390; THE REPAIR ASS’N, *supra* note 12.

²¹⁶ THE REPAIR ASS’N, *supra* note 12.

²¹⁷ *Id.*

²¹⁸ *See id.*

²¹⁹ *Id.*

²²⁰ *Id.*

upon “fair and reasonable terms” and permit access to the “documentation, tools, and parts needed to access and reset” electronic security locks or other security-related functions of equipment.²²¹

B. Federal Law Approach to Right to Repair

In addition to the work being done on the state level, a key piece of federal legislation, as mentioned previously, is that of Senate Bill 3549, known as the Agriculture Right to Repair Act.²²² The Bill, which was introduced by Senator Jon Tester (D-MT) on February 1, 2022, seeks to level the playing field between agriculture equipment manufacturers and consumers.²²³ The legislation requires manufacturers to make available, “on fair and reasonable terms, . . . any documentation, part, software, or tool required to diagnose, maintain, or repair digital electronic equipment for any electronics-enabled implement of agriculture,” and to also make available “any documentation, part, software, or tool required to disable or enable an electronic security lock or other security-related function of an electronics-enabled implement of agriculture.”²²⁴

Furthermore, the proposed legislation provides specific carveouts which allow copyright circumvention and ensure common availability of replacement parts to the consumer upon “fair and reasonable terms.”²²⁵

Lastly, the legislation provides for certain limitations and protections of the device manufactures including: (1) manufacturers need not divulge trade secrets; (2) existing agreements between manufacturers and authorized repair providers need not be altered; (3) documentation, parts, and tools need not be made available by authorized repair providers unless the authorized repair providers are also the manufacturer; (4) parts used solely in the development of products need not be made available; and (5) consumers are prevented from irreversibly altering equipment to permanently deactivate safety features or emissions controls, and making other illegal modifications.²²⁶

Evidently, this Bill gives numerous rights to the consumers at the expense of the device manufacturers. As of February 1, 2022, the Bill remains in the U.S. Senate and has been referred to the Committee on

²²¹ *Model State Right-to-Repair Law*, THE REPAIR ASS’N (July 2022), <https://docs.google.com/document/d/1RpxXlzHd4MxxqnZ6lnmr2StXp3HLOAdL/edit?ouid=118122803738776668928&rtfpof=true&sd=true&usp=sharing> [<https://perma.cc/RN42-6P74>].

²²² Agriculture Right to Repair Act, § 3549, 117th Cong. (2022).

²²³ *Id.*

²²⁴ *Id.* at § 3(a)–3(b).

²²⁵ *Id.* at § 3(c).

²²⁶ *Id.* at § 6.

Commerce, Science, and Transportation for review.²²⁷ At this time, the likelihood of success of this Bill is unknown, but its future enactment into law is doubtful. The Bill was introduced by a single Senator with only one co-sponsor.²²⁸ Furthermore, the immense lobbying power of agriculture equipment manufacturers and the massive market size of both the repair and original equipment markets makes this Bill likely to stall in the Senate.

The Bill, although well-intentioned, will likely not solve the larger issues at hand. The Bill almost exclusively targets software-enabled agriculture devices, and thus does not address design patents, utility patents, trademarks, or the malleability of contract law.²²⁹ While copyright law plays a significant role in device manufacturers' ability to thwart repairs by consumers, it is but one strand that makes up the web of protection. Therefore, even if certain circumventions of copyright laws are permitted by the passage of the Bill, device manufacturers are likely to place a greater emphasis on their other intellectual property rights, artificially inflate the "fair and reasonable" prices of their supporting equipment, tools, documentation, and software, and view the fines imposed by the FTC as costs of doing business rather than deterrence for their actions.

Lastly, and potentially the most glaring issue of the Bill, is contained in the limitations outlined in § 6.²³⁰ It states that original equipment manufacturers ("OEMs") need not divulge trade secrets to an owner or an independent service provider.²³¹ Trade secrets comprise "any confidential business information which provides an enterprise a competitive edge and is unknown to others."²³² By virtue of their secretive and confidential nature, trade secrets are often hard to identify, and thus, this exception may prove detrimental to the Bill and its intended goals.²³³ OEMs may claim all technological and commercial information needed by consumers for the repair of their devices as trade secrets, effectively limiting the scope of the Bill's protections and shifting manufacturers away from public-benefiting protections like patents and copyrights to non-public modes of protection like trade secrets.²³⁴

²²⁷ *Id.*

²²⁸ *Id.*

²²⁹ *See id.*

²³⁰ *Id.* at § 6.

²³¹ *Id.*

²³² *Frequently Asked Questions: Trade Secrets*, WORLD INTELL. PROP. ORG., https://www.wipo.int/tradesecrets/en/tradesecrets_faqs.html [<https://perma.cc/YK9G-WQLS>].

²³³ *See id.*

²³⁴ *See id.*

In sum, although the Bill is a significant step forward in right to repair reform, its current construction and lack of apparent support render it effectively meaningless.

C. Issues Presented by the American Dual Federalism Structure

Since many of the protections afforded to device manufacturers are governed by federal law and not state law, the clever lawyer can spot the glaring issue. At this time, the only real right to repair protections come in the form of state law. Although device manufacturers must adhere to the various state laws, their federal protections often preempt these state laws, allowing the manufacturers to continue their practices of monopolizing repair of their devices under the doctrine of federal preemption.²³⁵ For example, the independent repair shop may be able to circumvent software controls to identify or diagnose a mechanical problem but may not be able to acquire the parts needed to fix the problem.²³⁶ And if they do, the repair shop may still face an infringement claim under the DMCA.²³⁷

While states may be able to enforce their specific laws against manufacturers within their jurisdiction, these fines will again likely be viewed as costs of doing business for the manufacturers. If the costs do rise to impose a significant burden upon the manufacturers, they may stop doing business in the given states that have enacted permissive right to repair legislation. While stopping business in a single state is not unfathomable, if the forty states that have considered permissive right to repair legislation enact such legislation, the story may change.²³⁸

Furthermore, enforcement often requires filing a lawsuit. While some forms of enforcement may be granted to state agencies through specific legislation, as the laws currently stand, the majority of meaningful enforcement will likely be through the judicial system.²³⁹ Therefore, if consumers do not think they are likely to prevail, or do not have the means to bring suit, then enforcement is not likely to occur. This point is especially applicable to agriculture device consumers, as the job of the farmer is to focus on maintaining their land and producing crops rather than litigating for their rights in state and federal courts.

²³⁵ Cornell L. Sch., *Preemption*, LEGAL INFO. INST. (2021), <https://www.law.cornell.edu/wex/preemption> [<https://perma.cc/DRF5-B8F8>].

²³⁶ Perzanowski, *supra* note 29, at 363.

²³⁷ 17 U.S.C. § 1201.

²³⁸ *See* THE REPAIR ASS'N, *supra* note 12 (noting state control over general business law and contracts).

²³⁹ *See id.*

V. Potential Solutions

A. Restatement of Issues, Considerations, and Opposing Interests

Consumers wish to repair their purchased devices at a reasonable price and in the manner they deem appropriate.²⁴⁰ They do not want to be limited by restrictions imposed by device manufacturers to repair devices and do not want to be forced to replace otherwise functional equipment due to lock-outs and a lack of replacement parts.²⁴¹

By contrast, device manufacturers would like to prevent consumers from manipulating, repairing, augmenting, and tampering with equipment post-sale.²⁴² These device manufacturers make money by requiring certain repair avenues and limiting the availability of information, parts, and tools to repair the devices.²⁴³ Replacement of devices is incredibly lucrative, and as the current state of the law stands, device manufacturers have no incentive to change their approach.

B. Balancing the Interests of Right to Repair Reform

While some statutes on the state level guarantee a consumer's right to repair devices for certain automotive applications, and pending federal legislation may expand these rights to electronics-enabled implements of agriculture, consumers are unlikely to feel a change. Consumers have significantly less bargaining power than these large device manufacturers.²⁴⁴ They do not spend billions of dollars per year lobbying legislators or have the resources to effectuate meaningful change. Furthermore, existing intellectual property laws seem to reward inventors, artists, and manufacturers to the detriment of consumers.

While this Article asserts that consumers have an implicit guarantee to the right to repair their purchased devices, existing law does not mirror this sentiment. External market forces and the size of these companies make it impossible for the everyday consumer to stand up for their implicit right. On the other hand, companies have invested immense monetary resources and time into the development of their products and should not be required to hand over their hard work to consumers without some form of reward structure. Additionally, companies, although not intrinsically malicious, will not willingly adopt a scheme in accordance with consumers' wants without some external pressure, either in the form of

²⁴⁰ Mark, *supra* note 13, at 386.

²⁴¹ *Id.*

²⁴² Perzanowski, *supra* note 29, at 363.

²⁴³ *Id.*

²⁴⁴ See Grinvald & Tur-Sinai, *supra* note 17, at 102.

legislation or a massive shift in the form of consumer resistance. Acquiescence would be detrimental to their bottom lines. Even if the companies empathized with consumers' needs, it would be disadvantageous to the companies to succumb. Furthermore, most of these large device manufacturers are structured as corporations; therefore, if the directors of these corporations pursue avenues that do not monetarily benefit the shareholders, they may be liable to the shareholders for a breach of fiduciary duties via derivative suits.²⁴⁵

C. Multi-Layered Approach to Right to Repair Reform

As discussed, no true solution to the right to repair problem has been devised. An effective solution is not as simple as a single state or federal law. Instead, the solution is nestled within existing laws and may be brought to fruition through alternative interpretations and applications of the existing legal framework. Until external pressure, likely in the form of legislation, is enacted, companies will not change their course of action, and consumers will continue to be beholden to the device manufacturers. However, changes can be made to the current framework that could somewhat level the playing field between the two camps.

First, current intellectual property laws must be adjusted. The Framers of the United States Constitution sought an intellectual property regime that primarily favored progress and development over market monopolies.²⁴⁶ The intellectual property system has developed to provide incentives for such progress; the current incentives of limited monopolies offered by intellectual property protection dissuade others from using the technology to further progress and develop the technology to promote science and the useful arts.²⁴⁷ As such, the current limited monopolies of copyright law and design patents must be altered to better reflect their value to society and provide more opportunity for use and development by others.

The right to repair movement may benefit from the shortening of copyright protection provided to authors. Current copyrights last an extremely long time, but this has not always been the case. Over the years, copyright protection has increased in duration from twenty-eight years in

²⁴⁵ Cornell L. Sch., *Shareholder Derivative Suit*, LEGAL INFO. INST. (2022).

https://www.law.cornell.edu/wex/shareholder_derivative_suit
[<https://perma.cc/U39L-AZ9C>].

²⁴⁶ Edward C. Walterscheid, *To Promote the Progress of Science and Useful Arts: The Background and Origin of the Intellectual Property Clause of the United States Constitution*, 2 J. INTELL. PROP. L. 1, 38 (1994).

²⁴⁷ See U.S. CONST. art. I, § 8, cl. 8; Tyler T. Ochoa & Mark Rose, *The Anti-Monopoly Origins of the Patent and Copyright Clause*, 84 J. PAT. & TRADEMARK OFF. SOC'Y 909, 922-928 (2002).

1909 to now, the life of the author plus seventy years, in most instances.²⁴⁸ Evidently, copyrights last significantly longer than the useful life of nearly every end-product. Additionally, inventors and artists tend to prefer to protect software through copyright rather than patents for several reasons, which include the length of protection afforded by copyright law when compared to that of patent law, and the reluctance of the USPTO to grant patent protection for certain software technologies under the judicially created “abstract ideas” exception.²⁴⁹ With that being said, if the copyright protection duration was shortened to mirror the life-cycle of software, which is the primary lock-out related to the right to repair movement, then consumers would be able to access, distribute, and commercialize the copyrighted work during the life of their equipment.

However, the shortening of copyright protection is not as easy as amending a few statutes. The United States Copyright system has developed in accordance with other nations’ copyright laws and, as such, must comply with international treaties and conventions.²⁵⁰ Instead of amending the duration of copyright protection, an alternative may be to reevaluate how software and copyrights interact.

Since copyright protection is afforded to original works of authorship that embody a “modicum of creativity,” software may not actually meet these criteria.²⁵¹ While software is indeed a form of authorship and may include a “modicum of creativity,” it does not fit squarely within the current copyright scheme of the United States.²⁵² Because software is primarily functional, it may benefit from being protected under its own statutory regime, in which software undergoes a more evaluative application and registration process, and the protections afforded to the software are more in line with its life-cycle and intended purpose. Under this new regime, software would be viewed separately from other intellectual property and, therefore, would not need to be retrofitted into existing intellectual property laws. This legislative scheme may include specific statutes aimed at software, its duration, and avenues for fair use by the consumer.

As it relates to design patents, the USPTO’s modern trend, which favors the liberal granting of design patents, and the increased damages in

²⁴⁸ Copyright Act of 1909, Pub. L. No. 60-349, § 23.; *see also* 17 U.S.C. § 302(a).

²⁴⁹ *See, e.g.,* Alice Corp. Pty. Ltd. v. CLS Bank Int’l, 573 U.S. 208, 219 (2014); *see also* Bilski v. Kappos, 561 U.S. 593, 609–10 (2010) (discussing difficulties of patenting ideas).

²⁵⁰ *See* 828 U.N.T.S. 221; *see also* 216 U.N.T.S. 132 (detailing universal copyright system to facilitate a wider dissemination of works).

²⁵¹ *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 362 (1991); *see* 17 U.S.C. § 102 (describing the subject matter of copyrights).

²⁵² *See generally* Tracy Reilly, *Copyright and a Synergistic Society*, 18 MINN. J.L. SCI. & TECH. 575, 584–85 (2017) (noting the basis of originality within copyright law).

design patent infringement suits has made those patents a key piece in thwarting the right to repair.²⁵³ Accordingly, Congress must reevaluate the purpose, duration, and scope of design patents. Courts have liberally expanded the scope of design patents from its original intent of protecting “articles of manufacture” to now protecting all parts, components, sub-components, and complex machines.²⁵⁴ Today, design patents are rarely rejected on substantive grounds and can be had for constituent parts of an article of manufacture.²⁵⁵ Furthermore, courts have degraded the ornamentality versus functionality distinction inherent in design patents, thereby granting design patents for components that are at least partially functional rather than exclusively ornamental.²⁵⁶ Therefore, to reduce the breadth of protection afforded by design patents, design patent protections must be brought back in line with their original interpretation of the statute, which prohibited the grant of design patents on functional and semi-functional components.²⁵⁷

Next, state and federal laws must reevaluate the restrictive license agreements promulgated by device manufacturers. Contract law has consistently provided a means for circumventing certain intellectual property safeguards.²⁵⁸ Furthermore, contract law has been relied upon for exerting exorbitant control upon products post-sale despite direction otherwise from the Supreme Court.²⁵⁹

A primary element of contract law is consideration.²⁶⁰ Consideration must be given by both parties to form a valid, enforceable contract.²⁶¹ Part of the consideration prong is that of bargaining.²⁶² These license agreements do not resemble a bargain between the parties. The customers are presented with a mere take-it-or-leave-it situation.²⁶³ The parties also have an extreme and disproportionate difference in bargaining power, which can affect the level and type of consideration rendered in any particular instance.²⁶⁴ However, courts have been traditionally reluctant to find contracts of adhesion unenforceable, as the consumer ultimately has

²⁵³ PERZANOWSKI, *supra* note 25, at 134.

²⁵⁴ *Id.* at 135.

²⁵⁵ *Id.* at 137.

²⁵⁶ *Id.* at 139.

²⁵⁷ *Id.* at 140.

²⁵⁸ RUSTAD, *supra* note 181, at 618.

²⁵⁹ See *Impression Prods., Inc.* 581 U.S. at 376.

²⁶⁰ Cornell L. Sch., *Consideration*, LEGAL INFO. INST. (2021), <https://www.law.cornell.edu/wex/consideration> [<https://perma.cc/7XWF-BP3X>].

²⁶¹ *Id.*

²⁶² *Id.*

²⁶³ Todd D. Rakoff, *Contracts of Adhesion: An Essay in Reconstruction*, 96 Harv. L. Rev. 1173, 1224 (1983).

²⁶⁴ *Id.* at 1194.

the ability to read the contract and decide whether or not to agree to the terms.²⁶⁵

To combat these positions taken by manufacturers, courts must be willing to find the terms of these “shrink-wrap” contracts unconscionable and thus unenforceable.²⁶⁶ Consumers are disproportionately less apt to advocate for their rights, and the device manufacturers know this. Device manufacturers will continue to enforce license agreements which limit the rights of consumers until consumers are willing to bring suit and courts are willing to invalidate these contracts on the basis of unconscionability, inadequate consideration, and findings of unenforceable contracts of adhesion.²⁶⁷

The next step in the right to repair movement is to require manufacturers to build in a “degree of repairability” into their equipment, products, and devices.²⁶⁸ Currently, device manufacturers have a strong incentive, mostly monetary, to design products that cannot be repaired.²⁶⁹ Lawmakers must craft laws in such a way as to require a degree of repairability in products. Instead of using proprietary fasteners, glue in place of screws, or plastics as an alternative to metals, device manufacturers must be compelled to design and manufacture products that can be repaired.²⁷⁰ This is, however, a very unlikely solution. First, degree, like reasonableness, fairness, and a variety of other terms known all too well by lawyers, is an amorphous term. One’s interpretation of degree or reasonableness may not be that of another. Second, this approach is antithetical to the approach taken by the United States in nearly all matters. The United States often takes a position that businesses are free to operate in manners which they deem appropriate and refuses to interject unless public policy considerations or enacted legislation mandates. Therefore, legislation targeting a degree of repairability is likely not an option at all in the United States.

Lastly, and potentially most applicable, is the Sherman Act and antitrust considerations. Tech and agriculture manufacturing companies seem to resemble companies like Standard Oil more and more every day.²⁷¹ Therefore, they should be treated as such. It is no secret that these companies focus on eliminating local and regional competition, attempt to control the entire supply and market chains, and expand their reach into

²⁶⁵ *Id.*

²⁶⁶ *Id.* at 1176.

²⁶⁷ *See id.* at 1209.

²⁶⁸ *Mirr, supra* note 181, at 2419.

²⁶⁹ *Id.*

²⁷⁰ *Id.* at 2421.

²⁷¹ Naomi R. Lamoreaux, *The Problem of Bigness: From Standard Oil to Google*, 33 J. ECON. PERSP. 3, 113 (2019).

all supporting and secondary markets related to their products.²⁷² Market competition in all sectors is shrinking dramatically, and customers do not have many choices regarding from whom they buy their products.

The Sherman Act was created to preserve free and unfettered competition in trade, commerce, and markets.²⁷³ Further developments in American antitrust regulation, in the form of the Federal Trade Commission Act and the Clayton Act, expanded federal oversight into businesses and helped to level the playing field among market participants.²⁷⁴ However, since its enactment, the Sherman Act, and subsequent antitrust legislation, has seen mixed interpretation by the courts and enforcement by the federal government.²⁷⁵ Much like the issues related to design patents and license agreements, until courts alter their interpretation of antitrust legislation or Congress amends the current legislation to make it more applicable to the modern monopolies of 2022, very little will change.²⁷⁶ Companies like Apple, Facebook, and John Deere will continue to exploit consumers for their monetary benefit.²⁷⁷

Provided that antitrust legislation enforcement swings in favor of promoting free and unfettered competition in trade, these giant companies may be treated as monopolies, regulated as such, and have their ability to control every aspect of their products restricted. By doing so, the market may gradually expand, giving consumers more options and ultimately allow other players to enter the field, offering less restrictive products and placing the choice back in the hands of consumers.

VI. Conclusion

In sum, the issues surrounding the right to repair movement are complex, nuanced, and difficult. Model and current legislation have attempted to balance the competing interests of consumers and manufacturers with limited success. The disparate bargaining power of these two camps makes it difficult for consumers to advocate on their behalf, and large companies will not acquiesce to the demands of consumers without outside pressure.

To combat the issue of the right to repair, lawmakers must amend current laws to provide specific carveouts for consumers, and future legislation must consider the response by device manufacturers. Until

²⁷² Flowers, *supra* note 192.

²⁷³ See Laura Phillips Sawyer, *US Antitrust Law and Policy in Historical Perspective*, 1–6 (Harv. Bus. Sch., Working Paper No. 19–110, 2019).

²⁷⁴ *Id.*

²⁷⁵ *Id.*

²⁷⁶ See *id.* at 22–23.

²⁷⁷ See *id.*

antitrust enforcement is increased, intellectual property protections are attenuated, and unconscionable contracts are found unenforceable, the status quo is likely to continue. While unfortunate for the consumer, this is the way of the free market. It is as simple as basic economics. Where demand is immense and supply limited, the suppliers maintain the upper hand. If more suppliers enter the field and consumers are provided with other avenues to accomplish their intended goals, then the outlook of the right to repair movement may change for the better.