No. 18-956

In the
Supreme Court of the United States

GOOGLE LLC,
Petitioner,
v.
ORACLE AMERICA, INC.,
Respondent.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF *AMICI CURIAE* AUTO CARE ASSOCIATION AND STATIC CONTROL COMPONENTS, INC. IN SUPPORT OF THE PETITIONER

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STATEMENT OF INTEREST[1]

Amici represent the interests of companies that compete against original equipment manufacturers ("OEMs") for sale and for repair and customization of products in the automotive and office technology industries, which products' functions are controlled by software embedded in semiconductor chips.

Auto Care Association is a national trade organization of over 3,000 members representing more than 150,000 independent businesses that manufacture, distribute, and sell motor vehicle parts, accessories, tools, equipment, materials, and supplies, and perform vehicle service and repair. Following expiration of a new car warranty, over 70% of car owners who patronize auto repair shops rely on independent repair shops over new car dealers. The independent auto care industry added some $405 billion to the American economy in 2018 (about 2% of GDP), and provided employment to more than 4.7 million workers.

Static Control Components, Inc. is a supplier of components to the imaging supplies industry, including thousands of components used by aftermarket competitors to recondition and repair

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[1] The parties have consented to the filing of this brief. No counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than amici or their counsel made a monetary contribution to its preparation or submission.

hundreds of OEM printer cartridge models. Acquisition guidelines of federal agencies, state and municipal governments, and corporations give preference to purchasing refurbished recycled toner cartridges.[2] Remanufactured cartridges constitute some 30-35% of annual cartridge sales; but some 375 million cartridges still are discarded into landfills annually.[3]

Virtually every modern product is controlled by software. To diagnose and repair those products, and to create competitive and improved products, the businesses built by amici depend on the right to access and interface with software. The Federal Circuit's decision threatens that right to repair by granting overbroad copyright protection to the declaring code of application program interfaces ("APIs"). Uncertainty over the scope of copyright in functional software code, in turn, has emboldened OEMs to file suits for copyright infringement and circumvention under the Digital Millennium Copyright Act of 1998 ("DMCA") against service, repair, replacement parts, and customization deemed lawful under patent and competition law.

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[2] *See* Environmental Protection Agency, Comprehensive Procurement Guidelines for Non-paper Office Products, https://www.epa.gov/smm/comprehensive-procurement-guidelines-non-paper-office-products#08 (last visited Jan. 8, 2020). The computer printers in this Court's chambers likely use remanufactured printer cartridges.

[3] Hari Vasudevan, Vilas Kalamkar, Ravi Terkar, *Remanufacturing for Sustainable Development: Key Challenges, Elements, and Benefits*, 3 The International Journal of Innovation, Management and Technology, No. 1, Feb. 2012, http://www.ijimt.org/papers/202-CM026.pdf.

Therefore, the amici submit this brief to elucidate for the Court the harm that the Federal Circuit's misinterpretation of Copyright Act Section 102(b) will cause to aftermarket commerce generally and the industries which the amici represent.

SUMMARY OF ARGUMENT

Virtually every product with a button, display, plug, or battery runs on software. On a daily basis, consumers use hundreds of computer programs embedded in chips within these products. Those programs commonly interoperate with other programs to enable these devices to perform their intended functions. The information necessary to enable that interoperability is contained in the declaring code of an application program interface, or "API." Thus, to maintain, service, repair, customize, and refurbish these OEM products, competitors must access the product software applications through the program interface.

The majority of courts have correctly held that the functions and procedures in declaring code—designed to enable data exchange, access, and interop-erability—are not protectable by copyright. Section 102(b) excludes from copyright ideas, facts, procedures, processes, methods, numerical values, and systems. Names and short phrases assigned to API functions are not copyrightable. 37 C.F.R. § 202.1(a). The doctrines of merger and *scènes à faire* preclude copyright

protection for program code that reflects standard programming techniques and technical constraints imposed by programming languages and hardware. *See Computer Assocs. Int'l v. Altai, Inc.*, 982 F.2d 693, 707-710 (2d Cir. 1992); *Lexmark Int'l v. Static Control Components*, 387 F.3d 522, 534-537 (6th Cir. 2004).

Granting copyright protection to APIs threatens otherwise lawful competition for repair, replacement, and customization of software-enabled products. Over the last 20 years, independent businesses that offer products and services that rely on interoperability have faced bet-the-company lawsuits alleging copyright infringement and, increasingly, circumvention under the DMCA. Fair use may protect these competitors against copyright infringement claims, but courts have held fair use does not exempt violations of the DMCA.

While this Court consistently has interpreted intellectual property rights so as not to interfere with the public's right to repair the chattels they own, the Federal Circuit opinion would allow OEMs to leverage copyright to bar independent competition for replacement parts and repair services. Amici therefore urge this Court to reverse the opinion below, and to clarify under existing law that copyright protection should not be accorded to API declaring code that specifies the data and functions necessary to interoperability.

ARGUMENT

I. INDEPENDENT BUSINESSES THAT REPAIR SOFTWARE-ENABLED PRODUCTS RELY ON ACCESS AND INTEROPERABILITY WITH NON-COPYRIGHTABLE ELEMENTS OF APIS.

By misinterpreting the scope of copyrightability for API declaring code, the Federal Circuit has sanctioned the use of copyright to block lawful competition – thereby restricting consumer choice, increasing consumer prices, and stifling aftermarket innovation for every software-enabled product. Meaning, virtually *every* product.

This case is not just about smart phones or devices ordinarily thought of as "computers." The humdrum devices used daily—alarm clocks, coffee makers, microwave ovens, garage door openers, refrigerators, and laundry machines—operate on software embedded in semiconductor chips.

The amici's industries exemplify this trend of products increasingly incorporating software controls:

- It is no exaggeration to call cars "computers on wheels." In 2000, a typical SUV had fewer than ten (10) modules with embedded software controllers. By 2019, that same vehicle model incorporated 70 or more software units. The latest innovation –

computer-connected tires – were rolled out at last week's 2020 Consumer Electronics Show.[4]

- Computer printer cartridges contain semiconductor chips with software code and data that interoperate with the specific make and model printer and printer software.

Today's repair shop toolboxes add laptop computers and specialized software diagnostics to the mix of wrenches and screwdrivers that once were sufficient to get the job done. Repairing products with embedded software now requires independent services to (a) access OEM software and stored operations data, (b) replace broken physical parts with new physical parts loaded with the same software, (c) replace or modify the existing code, or (d) replace or add parts with independently developed code.[5]

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[4] Sebastian Blanco, *Bridgestone Rolls Out a Connected Tire Concept Claimed to Make You Safer*, Car and Driver, (Jan. 8, 2020), https://www.caranddriver.com/news/a30443516/bridgestone-connected-tire/; s*ee also,* Robert N. Charette, *This Car Runs on Code*, IEEE Spectrum (Feb. 1, 2009), http://spectrum.ieee.org/transportation/systems/this-car-runs-on-code.

[5] Automotive computing systems also generate massive amounts of data detailing vehicle and driver operations, and access to that data can be necessary to repair or improve vehicle functions. *See* Gopal Ratnam, *Your Car is Watching You. Who Owns the Data?*, Roll Call, (Apr. 9, 2019), https://www.rollcall.com/news/policy/cars-data-privacy.

All of these services depend upon the inter-operability of the replacement parts and program code to access and exchange data with the existing OEM product software. That interoperability depends, in turn, on the ability of independent competitors to access and use non-copyrightable elements of the OEM product code free from claims under copyright law. Independent competitors use this API declaring code to correct OEM design issues discovered in use, and innovate improvements on the OEM product functions, such as more granular regulation of a vehicle's fuel mixture or monitoring of ink and toner levels.[6]

This Court recently reaffirmed that patent law does not restrict independent parts manufacturers and repair services from repairing products under principles of patent exhaustion and competition law. *See Impression Prods. v. Lexmark Int'l.*, 137 S. Ct. 1523 (2017). But while the Court has opened the doors of *patent* law to permit independent repair, OEMs increasingly are turning to *copyright* law to stifle competition to service and repair OEM products with embedded software. In addition to asserting rights in methods and data in embedded software, OEMs incorporate technological protection measures (such as cryptographic "handshakes") in their products—thereby leveraging both copyright infringement and

[6] For example, Static Control's "AllPage" technology saves consumers as much as 15-30% of toner over OEM software by more accurately reporting the number of printable pages remaining from a cartridge. https://www.scc-inc.com/allpage/index.html (last visited Jan. 8, 2020).

the DMCA against lawful aftermarket competition, to the detriment of consumers and independent businesses.[7] For example:

- Automobile manufacturers such as Ford Motor Company and General Motors have filed litigation against replacement parts manufacturers, based on alleged infringement of copyright and violations of the anticircumvention provisions of the DMCA.[8]

- Computer printers implement software-based technological measures to prevent and restrict consumer use of competitive remanufactured printer cartridges. For example, HP uses "Toner Cartridge Authentication technology" to "ensure that any cartridge(s) installed in the printer is a genuine HP LaserJet supply" – i.e., not a competitor's less expensive replacement

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[7] The Digital Millennium Copyright Act of 1998 provides stiff statutory damages and injunctive remedies against unauthorized circumvention of technological measures (such as passwords or cryptographic authentication methods) that control access to copyrighted works, and that protect a right of copyright owners in copyrighted works (such as by encrypting the works). 17 U.S.C. § 1201(a)(1) and (2). While intended to protect emerging digital and online commerce, as explained herein OEMs have wielded the DMCA—generally unsuccessfully—against aftermarket competitors in a variety of industries.

[8] *General Motors LLC v. Dorman Prods, Inc.*, No. 15-12917 2016 WL 5661578 (E.D. Mich. Sept. 30, 2016); *Ford Motor Co. v. AUTEL US Inc.*, No. 14-13760, 2015 WL 5729067, Op. and Order, (E.D. Mich. Sept. 30, 2015).

cartridge.[9] As another example, Lexmark used software encryption between its printers and a cartridge chip to lock-out competitors' remanufactured recycled cartridges; and sued competitors for alleged copyright infringement and DMCA violations for developing replacement chips and cartridges.[10]

- John Deere implements technological barriers to prevent farmers from accessing software to troubleshoot and repair their own equipment.[11] Lost time during spring planting and fall harvesting seasons can cost these farmers tens of thousands of dollars –

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[9] *See* HP Customer Support Knowledge Base, https://support.hp.com/us-en/document/c02632486 (last visited Jan. 8, 2020); *see also* Cory Doctorow, *HP once again caught sneaking code into printers to reject third-party ink*, boingboing.net (Sept. 14, 2017), https://boingboing.net/2017/09/14/repeat-offenders.html. Brother Int'l. Corp. similarly updates printer firmware to lock out competitor cartridges. The Recycler, *New Firmware updates affect aftermarket cartridges* (Mar. 27, 2019), https://www.therecycler.com/posts/new-firmware-updates-affect-aftermarket-cartridges/.

[10] *Lexmark Int'l v. Static Control Components*, 134 S. Ct. 1377, 1383-84 (2014). *See also*, *Impression Prods.*, 137 S. Ct. at 1529-30.

[11] *See* Adam Minter, *U.S. Farmers Are Being Bled by the Tractor Monopoly*, Bloomberg (Apr. 23, 2019), https://www.bloomberg.com/opinion/articles/2019-04-23/u-s-farmers-need-a-better-way-to-fix-their-tractors; Kyle Wiens and Elizabeth Chamberlain, *John Deere Just Swindled Farmers out of Their Right to Repair*, Wired, (Sept. 9, 2018). https://www.wired.com/story/john-deere-farmers-right-to-repair/.

not to mention the higher cost of service by an "authorized" dealer – and so many farmers are buying older tractors they can fix themselves.[12]

- Software in Keurig's "2.0" coffee maker rejected coffee pods without Keurig's "interactive" seal.[13]

- Manufacturers of medical devices such as CPAP machines deploy software-based measures to restrict access to collected data.[14]

Careful analysis of copyrightability is crucial to these cases for two reasons. First, embedded software programs often consist of short, purely functional code written using standard programming techniques within constraints that merge the function and the expression.[15]

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[12] Colin Beresford, *Midwest Farmers Are Tired of Tech-Loaded Tractors They Can't Fix*, Car and Driver (Jan. 8, 2020), https://www.caranddriver.com/news/a30444879/midwest-farmers-buying-older-tractors/.

[13] *In re Keurig Green Mountain*, 383 F. Supp. 3d 187, 214, 230-31 (S.D.N.Y. 2019); Brian Barrett, *Keurig's My K-Cup Retreat Shows We Can Beat DRM*, Wired (May 8, 2015), https://www.wired.com/2015/05/keurig-k-cup-drm/.

[14] The Librarian of Congress determined, in a triennial proceeding, that circum-vention of such technological measures does not violate Section 1201(a)(1) of the DMCA. Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 83 Fed. Reg. 54010, 54013, 54029 (Oct. 26, 2018) (codified at 37 C.F.R. pt. 201).

[15] *See Lexmark v. Static Control*, 387 F.3d at 539-540; *Static Control Components v. Lexmark Int'l*, Nos. Civ. A. 02-

Accordingly, such programs may not qualify for copyright protection in the first instance. Second, DMCA anticircumvention liability obtains *only* where the technological measure protects against unauthorized access to or use of a copyrighted work. Thus, non-copyrightability is a complete defense to DMCA liability; but the majority of courts hold that fair use is not.[16]

The Copyright Office studied the impact of copyright law and the DMCA on software-enabled products, and concluded that copyright law should not impede repair and modification either as a matter of copyright infringement or under Section 1201 of the DMCA.[17] As the Register observed, Congress did not intend "that section 1201 would serve as a sword to inhibit market entrants from offering competing consumer products." 1201 Study

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571, Civ. A. 04-84, 2007 WL 1485770 (E.D. Ky. Apr. 18, 2007) (granting summary judgment of non-copyrightability of copied embedded program).

[16] *See MDY Indus. v. Blizzard Entm't*, 629 F.3d 928 (9th Cir. 2010) (rejecting fair use defense to DMCA circumvention proscriptions); *Universal City Studios v. Corley*, 273 F.3d 429, 443-444 (2d Cir. 2001) (DMCA "targets the *circumvention* of digital walls guarding copyrighted material . . . but does not concern itself with the *use* of those materials after circumvention has occurred."); *but see Chamberlain Grp. v. Skylink Tech.*, 381 F.3d 1178 (Fed. Cir. 2004) (in case involving aftermarket garage door openers, restricting DMCA proscriptions to circumvention in aid of infringement).

[17] U.S. Copyright Office, A Report of the Register of Copyrights, *Section 1201 of Title 17*, at 38-40, 47-49 (June 2017) ("1201 Study"); U.S. Copyright Office, A Report of the Register of Copyrights, *Software-Enabled Consumer Products* at 27-41 (Dec. 2016).

at 48. Similarly, the Register concluded, "[t]raditional copyright doctrines such as the idea/expression dichotomy, merger, *scènes à faire*, and fair use provide a combined and reasonable defense for many tinkering and repair activities." Software-Enabled Consumer Products Study at 33.

But the Register's finding came with a caveat, presciently pertinent to this case: repair of software-enabled products may be accommodated under "current copyright law, *properly interpreted*. . . ." *Id.* (emphasis added). Thus, if not corrected by this Court, the Federal Circuit's *im*proper interpretation of copyright law will reverberate throughout markets for all software-enabled products, and thwart consumers' and competitors' lawful right to repair.

II. PROPER INTERPRETATION OF COPYRIGHT LAW AND DOCTRINES SHOWS THAT API DECLARING CODE IS NOT PROTECTABLE BY COPYRIGHT.

Copyright protection extends only to copyrightable subject matter under Section 102, and "only to those components of a work that are original to the author." *Feist Publ'ns Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 348 (1991). Copyrightable subject matter excludes ideas, procedures, methods of operation, concepts, and principles, 17 U.S.C. § 102(b), all of which functions form the heart of API declaring code.

Traditional doctrines constraining copyrightability have been contextually applied to computer program code. Where a particular idea can only be expressed in a limited number of ways, the "merger" doctrine denies copyright protection to those components. *See Gates Rubber Co. v. Bando Chem. Indus., Ltd.*, 9 F.3d 823, 836-37 (10th Cir. 1993). Facts, such as numerical values, cannot be protected. *Id.* at 837. Names assigned to API routines and functions are not copyrightable. 37 C.F.R. § 202.1(a). *See Mitel, Inc. v. Iqtel, Inc.*, 124 F.3d 1366, 1373 (10th Cir. 1997) (finding neither names of functions nor numerical values merit copyright protection).[18] Code that follows typical programming practices, or reflects constraints imposed by programming languages, hardware, or size limitations, also cannot be copyrightable (or deemed to be "original" reflections of authorship) under the *scènes à faire* doctrine. *See Computer Assocs. v. Altai*, 982 F.2d at 707-710; *Lexmark v. Static Control*, 387 F.3d at 534-537.

For nearly three decades, courts assessing the copyrightability of computer programs have applied the *Computer Assocs. v. Altai* "abstraction-filtration-comparison" test to determine, first, what elements of a program are copyrightable, and then whether copyrightable elements were infringed.

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[18] *See also ATC Distribution Grp., Inc. v. Whatever It Takes Transmissions*, 402 F. 3d 700 (6th Cir. 2005) (holding catalog parts numbers not copyrightable); *Southco, Inc. v. Kanebridge Corp*, 390 F.3d 276 (3d Cir. 2004) (en banc) (holding, *inter alia*, part numbers excluded from copyright protection as analogous to short phrases or titles).

This "A-F-C" test is fully consonant with this Court's precedents. As *Feist* observed, "[t]he mere fact that a work is copyrighted does not mean that every element of the work may be protected." *Id.*, 499 U.S. at 348. *Cf. Star Athletica v. Varsity Brands*, 137 S. Ct. 1002, 1016 (2017) (holding that features designed into useful articles must be capable of being perceived, and must be assessed for protectability, separately from the useful article).

The Federal Circuit failed to correctly apply the A-F-C test and thus erroneously concluded that the API declaring code could be protected by copyright. First, the Federal Circuit erred in considering these doctrines in the infringement analysis, rather than as elements of copyrightability. Where the range of expression available to a programmer is so limited that the expression and the idea become one, the expression *is* the idea, and ideas are excluded from copyrightable subject matter under Section 102(b). Similarly, *scènes à faire* excludes elements compelled by externalities which, by definition, cannot be original authorship—again, affecting copyrightability rather than infringement. *See Lexmark v. Static Control*, 387 F.3d at 539 (noting that these doctrines "discern whether 'originality' exists in the work").

Second, the Federal Circuit erroneously reversed the district court finding of merger merely because Oracle or Google could have assigned different names to API declaring code functions or

variables. *Oracle Am. v. Google*, 750 F.3d 1339, 1361 (Fed. Cir. 2014). Names are not copyrightable expression, so adopting the same non-protectable names cannot constitute infringement.[19] Moreover, the Federal Circuit's approach ignores the key inquiry: whether the declaring code *as written* was original, not whether there were alternative ways to name (or even write) the declaring code. The phone listings in *Feist* could have been arranged in an original manner, but that did not render their non-original arrangement protectable. *See Lexmark v. Static Control*, 387 F.3d at 538.

Third, the Federal Circuit erroneously concluded that use of the declaring code for purposes of interoperability pertained only to fair use but not protectability. The Ninth Circuit cases cited by the Federal Circuit held that the fair use defense exempted from infringement intermediate copying of program code to access its non-copyrightable elements (such as ideas and lock-out codes), while confirming that those functional elements themselves were unprotected. *See Sony Comput. Entm't v. Connectix Corp.*, 203 F.3d 596, 603-604 (9th Cir. 2000); *Sega Enters. v. Accolade, Inc.*, 977 F.2d 1510, 1518 (9th Cir. 1992). The district court here held, correctly, that the declaring code is functional—it defines the methods of operation that enable independently-written

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[19] *Supra,* at 12. Differences between the names "math.max," "math.maximum," and "Arith.larger" are so minute as to lack authorship and originality, and can have no legal significance for purposes of the merger doctrine. *Cf.* William Shakespeare, *Romeo and Juliet*, act 2, sc. 2, at 45-46.

programs to operate in the Java environment, and it has to be used precisely as-is, without alteration, to achieve interoperability.

* * *

This Court consistently has reaffirmed the right of consumers and competitors to repair patented articles under principles of patent law. The Court's decision here will determine whether copyright law becomes the new gatekeeper over competition for compatible products and services. There is no policy justification to treat any differently the right to repair products controlled by functional computer code than products that implement utility patents. Indeed, it would contravene long-standing copyright doctrines if courts vested API declaring code, intended as the engine of innovation and interoperability, with the power to stifle competition.

CONCLUSION

The Federal Circuit decision should be reversed.

Respectfully submitted,

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