Syllabus

# QUANTA COMPUTER, INC., ET AL. *v.* LG ELECTRONICS, INC.

## CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

No. 06–937. Argued January 16, 2008—Decided June 9, 2008

The longstanding doctrine of patent exhaustion limits the patent rights that survive the initial authorized sale of a patented item. Respondent (LGE) purchased, *inter alia,* the computer technology patents at issue (LGE Patents): One discloses a system for ensuring that most current data are retrieved from main memory, one relates to the coordination of requests to read from and write to main memory, and one addresses the problem of managing data traffic on a set of wires, or "bus," connecting two computer components. LGE licensed the patents to Intel Corporation (Intel), in an agreement (License Agreement) that authorizes Intel to manufacture and sell microprocessors and chipsets using the LGE Patents (Intel Products) and that does not purport to alter patent exhaustion rules. A separate agreement (Master Agreement) required Intel to give its customers written notice that the license does not extend to a product made by combining an Intel Product with a non-Intel product, and provided that a breach of the agreement would not affect the License Agreement. Petitioner computer manufacturers (Quanta) purchased microprocessors and chipsets from Intel. Quanta then manufactured computers using Intel parts in combination with non-Intel parts, but did not modify the Intel components. LGE sued, asserting that this combination infringed the LGE Patents. The District Court granted Quanta summary judgment, but on reconsideration, denied summary judgment as to the LGE Patents because they contained method claims. The Federal Circuit affirmed in part and reversed in part, agreeing with the District Court that the patent exhaustion doctrine does not apply to method patents, which describe operations to make or use a product; and concluding, in the alternative, that exhaustion did not apply because LGE did not license Intel to sell the Intel Products to Quanta to combine with non-Intel products.

*Held:* Because the doctrine of patent exhaustion applies to method patents, and because the License Agreement authorizes the sale of components that substantially embody the patents in suit, the exhaustion doctrine prevents LGE from further asserting its patent rights with respect to the patents substantially embodied by those products. Pp. 625–638.

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(a) The patent exhaustion doctrine provides that a patented item's initial authorized sale terminates all patent rights to that item. See, *e. g.*, *Bloomer* v. *McQuewan*, 14 How. 539. In the Court's most recent discussion of the doctrine, *United States* v. *Univis Lens Co.*, 316 U. S. 241, patents for finished eyeglass lenses, held by the respondent (Univis), did not survive the sale of lens blanks by the licensed manufacturer to wholesalers and finishing retailers who ground the blanks into patented finished lenses. The Court assumed that Univis' patents were practiced in part by the wholesalers and finishing retailers, concluding that the traditional bar on patent restrictions following an item's sale applies when the item sufficiently embodies the patent—even if it does not completely practice the patent—such that its only and intended use is to be finished under the patent's terms. The parties' arguments here are addressed with this patent exhaustion history in mind. Pp. 625–628.

(b) Nothing in this Court's approach to patent exhaustion supports LGE's argument that method claims, as a category, are never exhaustible. A patented method may not be sold in the same way as an article or device, but methods nonetheless may be "embodied" in a product, the sale of which exhausts patent rights. The Court has repeatedly found method patents exhausted by the sale of an item embodying the method. See *Ethyl Gasoline Corp.* v. *United States*, 309 U. S. 436, 446, 457; *Univis*, *supra*, at 248–251. These cases rest on solid footing. Eliminating exhaustion for method patents would seriously undermine the exhaustion doctrine, since patentees seeking to avoid exhaustion could simply draft their claims to describe a method rather than an apparatus. On LGE's theory here, for example, although Intel is authorized to sell a completed computer system that practices the LGE Patents, downstream purchasers could be liable for patent infringement, which would violate the longstanding principle that, when a patented item is "once lawfully made and sold, there is no restriction on [its] *use* to be implied for the [patentee's] benefit," *Adams* v. *Burke*, 17 Wall. 453, 457. Pp. 628–630.

(c) The Intel Products embodied the patents here. *Univis* governs this case. There, exhaustion was triggered by the sale of the lens blanks because their only reasonable and intended use was to practice the patent and because they "embodie[d] essential features of [the] patented invention," 316 U. S., at 249–251. Each of those attributes is shared by the microprocessors and chipsets Intel sold to Quanta under the License Agreement. First, LGE has suggested no reasonable use for the Intel Products other than incorporating them into computer systems that practice the LGE Patents: A microprocessor or chipset cannot

function until it is connected to buses and memory. And as in *Univis*, the only apparent object of Intel's sales was to permit Quanta to incorporate the Intel Products into computers that would practice the patents. Second, like the *Univis* lens blanks, the Intel Products constitute a material part of the patented invention and all but completely practice the patent. The only step necessary to practice the patent is the application of common processes or the addition of standard parts. Everything inventive about each patent is embodied in the Intel Products. LGE's attempts to distinguish *Univis* are unavailing. Pp. 630–635.

(d) Intel's sale to Quanta exhausted LGE's patent rights. Exhaustion is triggered only by a sale authorized by the patent holder. *Univis*, *supra*, at 249. LGE argues that this sale was not authorized because the License Agreement does not permit Intel to sell its products for use in combination with non-Intel products to practice the LGE Patents. But the License Agreement does not restrict Intel's right to sell its products to purchasers who intend to combine them with non-Intel parts. Intel was required to give its customers notice that LGE had not licensed those customers to practice its patents, but neither party contends that Intel breached that agreement. In any event, the notice provision is in the Master Agreement, and LGE does not suggest that a breach of that agreement would constitute a License Agreement breach. Contrary to LGE's position, the question whether third parties may have received implied licenses is irrelevant, because Quanta asserts its right to practice the patents based not on implied license but on exhaustion, and exhaustion turns only on Intel's own license to sell products practicing the LGE Patents. LGE's alternative argument, invoking the principle that patent exhaustion does not apply to postsale restrictions on "making" an article, is simply a rephrasing of its argument that combining the Intel Products with other components adds more than standard finishing to complete a patented article. Pp. 635–637.

453 F. 3d 1364, reversed.

THOMAS, J., delivered the opinion for a unanimous Court.

*Maureen E. Mahoney* argued the cause for petitioners. With her on the briefs were *J. Scott Ballenger*, *Barry J. Blonien*, *Melissa B. Arbus*, *Vincent K. Yip*, *Peter Wied*, and *Maxwell A. Fox*.

*Deputy Solicitor General Hungar* argued the cause for the United States as *amicus curiae* in support of petitioners. With him on the brief were former *Solicitor General Clem-*

*ent*, *Assistant Attorneys General Keisler* and *Barnett*, *Deanne E. Maynard*, *Catherine G. O'Sullivan*, *David Seidman*, *Mark R. Freeman*, *James A. Toupin*, *Stephen Walsh*, *Shannon M. Hansen*, and *Heather F. Auyang*.

*Carter G. Phillips* argued the cause for respondent. With him on the brief were *Virginia A. Seitz*, *Jeffrey T. Green*, *Jeffrey P. Kushan*, *Rachel H. Townsend*, and *Quin M. Sorenson*.*

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*Briefs of *amici curiae* urging reversal were filed for the American Antitrust Institute by *Albert A. Foer* and *Richard M. Brunell;* for the Automotive Engine Rebuilders Association et al. by *Seth D. Greenstein* and *Stefan M. Meisner;* for the Computer & Communications Industry Association by *Jonathan Band;* for the Consumers Union et al. by *Fred von Lohmann*, *Jason Schultz*, and *Marc N. Bernstein;* for Dell Inc. et al. by *Andrew J. Pincus* and *Carl J. Summers;* for Gen-Probe Inc. by *Beth S. Brinkmann*, *Ketanji Brown Jackson*, *Brian R. Matsui*, and *David C. Doyle;* for International Business Machines Corp. by *Traci L. Lovitt* and *Michael A. Carvin;* for Motorola, Inc., by *Russell E. Levine;* and for Nokia Corp. et al. by *Kathleen M. Sullivan* and *David L. Cohen*.

Briefs of *amici curiae* urging affirmance were filed for Aerotel, Ltd., et al. by *Michael J. Doyle;* for AmberWave Systems Corp. by *Song K. Jung*, *Lawrence S. Ebner*, *Adrian P. Mollo*, *Megan B. Hoffman*, and *Bryan P. Lord;* for iBiquity Digital Corp. by *Roderick R. McKelvie*, *Robert A. Long, Jr.*, *Richard L. Rainey*, and *Theodore P. Metzler, Jr.;* for InterDigital Communications, LLC, et al. by *Kenneth C. Bass III* and *Robert G. Sterne;* for MPEG LA LLC by *Garrard R. Beeney*, *Ann McLean Jordan*, and *Kenneth Rubenstein;* for Papst Licensing GmbH & Co. Kg by *Lawrence Rosenthal*, *Steven E. Feldman*, and *Leonard Friedman;* for Rembrandt IP Management, LLC, by *Aaron M. Panner;* for QUALCOMM Inc. by *Richard W. Clary;* for Various Law Professors by *F. Scott Kieff;* for Wi-LAN, Inc., by *Robert E. Goodfriend*, *James N. Willi*, and *Joel L. Thollander;* and for Yahoo! Inc. by *Christopher J. Wright*, *Timothy J. Simeone*, *Joseph K. Siino*, and *Lisa G. McFall*.

Briefs of *amici curiae* were filed for the American Intellectual Property Law Association by *Jeffrey I. D. Lewis;* for the American Seed Trade Association by *Gary Jay Kushner* and *Lorane F. Hebert;* for the Biotechnology Industry Organization by *Patricia A. Millett* and *Thomas C. Goldstein;* for CropLife International by *Seth P. Waxman*, *Paul R. Q. Wolfson*, and *Sambhav N. Sankar;* for the Intellectual Property Owners Association by *Gary M. Hoffman* and *Kenneth W. Brothers;* for the Licens-

JUSTICE THOMAS delivered the opinion of the Court.

For over 150 years this Court has applied the doctrine of patent exhaustion to limit the patent rights that survive the initial authorized sale of a patented item. In this case, we decide whether patent exhaustion applies to the sale of components of a patented system that must be combined with additional components in order to practice the patented methods. The Court of Appeals for the Federal Circuit held that the doctrine does not apply to method patents at all and, in the alternative, that it does not apply here because the sales were not authorized by the license agreement. We disagree on both scores. Because the exhaustion doctrine applies to method patents, and because the license authorizes the sale of components that substantially embody the patents in suit, the sale exhausted the patents.

## I

Respondent LG Electronics, Inc. (LGE), purchased a portfolio of computer technology patents in 1999, including the three patents at issue here: U. S. Patent Nos. 4,939,641 ('641); 5,379,379 ('379); and 5,077,733 ('733) (collectively LGE Patents). The main functions of a computer system are carried out on a microprocessor, or central processing unit, which interprets program instructions, processes data, and controls other devices in the system. A set of wires, or bus, connects the microprocessor to a chipset, which transfers data between the microprocessor and other devices, including the keyboard, mouse, monitor, hard drive, memory, and disk drives.

The data processed by the computer are stored principally in random access memory, also called main memory. Webster's New World Dictionary of Computer Terms 334, 451

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ing Executives Society (U. S. A. & Canada), Inc., by *Joel E. Lutzker;* for NCR Corp. by *Morgan Chu* and *Laura W. Brill;* and for Technology Properties Limited by *Roger L. Cook*.

(8th ed. 2000). Frequently accessed data are generally stored in cache memory, which permits faster access than main memory and is often located on the microprocessor itself. *Id.*, at 84. When copies of data are stored in both the cache and main memory, problems may arise when one copy is changed but the other still contains the original "stale" version of the data. J. Handy, Cache Memory Book 124 (2d ed. 1993). The '641 patent addresses this problem. It discloses a system for ensuring that the most current data are retrieved from main memory by monitoring data requests and updating main memory from the cache when stale data are requested. *LG Electronics, Inc.* v. *Bizcom Electronics, Inc.*, 453 F. 3d 1364, 1377 (CA Fed. 2006).

The '379 patent relates to the coordination of requests to read from, and write to, main memory. *Id.*, at 1378. Processing these requests in chronological order can slow down a system because read requests are faster to execute than write requests. Processing all read requests first ensures speedy access, but may result in the retrieval of outdated data if a read request for a certain piece of data is processed before an outstanding write request for the same data. The '379 patent discloses an efficient method of organizing read and write requests while maintaining accuracy by allowing the computer to execute only read requests until it needs data for which there is an outstanding write request. *LG Electronics, Inc.* v. *Asustek Computer, Inc.*, No. C 01–02187 CW etc., Order Construing Disputed Terms and Phrases, p. 42 (ND Cal., Aug. 20, 2002). Upon receiving such a read request, the computer executes pending write requests first and only then returns to the read requests so that the most up-to-date data are retrieved. *Ibid.*

The '733 patent addresses the problem of managing the data traffic on a bus connecting two computer components, so that no one device monopolizes the bus. It allows multiple devices to share the bus, giving heavy users greater access. This patent describes methods that establish a rotating pri-

ority system under which each device alternately has priority access to the bus for a preset number of cycles and heavier users can maintain priority for more cycles without "hogging" the device indefinitely. *Id.*, at 37–38.

LGE licensed a patent portfolio, including the LGE Patents, to Intel Corporation (Intel). The cross-licensing agreement (License Agreement) permits Intel to manufacture and sell microprocessors and chipsets that use the LGE Patents (Intel Products). The License Agreement authorizes Intel to "'make, use, sell (directly or indirectly), offer to sell, import or otherwise dispose of'" its own products practicing the LGE Patents. Brief for Petitioners 8 (quoting App. 154).[1] Notwithstanding this broad language, the License Agreement contains some limitations. Relevant here, it stipulates that no license

> "'is granted by either party hereto . . . to any third party for the combination by a third party of Licensed Products of either party with items, components, or the like acquired . . . from sources other than a party hereto, or for the use, import, offer for sale or sale of such combination.'" Brief for Petitioners 8 (quoting App. 164).

The License Agreement purports not to alter the usual rules of patent exhaustion, however, providing that, "'[n]otwithstanding anything to the contrary contained in this Agreement, the parties agree that nothing herein shall in any way limit or alter the effect of patent exhaustion that would otherwise apply when a party hereto sells any of its Licensed Products.'" Brief for Petitioners 8 (quoting App. 164).

In a separate agreement (Master Agreement), Intel agreed to give written notice to its own customers informing them that, while it had obtained a broad license "'ensur[ing] that any Intel product that you purchase is licensed by LGE and thus does not infringe any patent held by LGE,'" the license

[1] App. 145–198 is sealed; where material contained therein also appears in the parties' unsealed briefs, citations are to the latter.

"'does not extend, expressly or by implication, to any product that you make by combining an Intel product with any non-Intel product.'" Brief for Respondent 9 (quoting App. 198; emphasis deleted). The Master Agreement also provides that "'a breach of this Agreement shall have no effect on and shall not be grounds for termination of the Patent License.'" Brief for Petitioners 9 (quoting App. 176).

Petitioners, including Quanta Computer (collectively Quanta), are a group of computer manufacturers. Quanta purchased microprocessors and chipsets from Intel and received the notice required by the Master Agreement. Nonetheless, Quanta manufactured computers using Intel parts in combination with non-Intel memory and buses in ways that practice the LGE Patents. Quanta does not modify the Intel components and follows Intel's specifications to incorporate the parts into its own systems.

LGE filed a complaint against Quanta, asserting that the combination of the Intel Products with non-Intel memory and buses infringed the LGE Patents. The District Court granted summary judgment to Quanta, holding that, for purposes of the patent exhaustion doctrine, the license LGE granted to Intel resulted in forfeiture of any potential infringement actions against legitimate purchasers of the Intel Products. *LG Electronics, Inc.* v. *Asustek Computer Inc.*, 65 USPQ 2d 1589, 1593, 1600 (ND Cal. 2002). The court found that, although the Intel Products do not fully practice any of the patents at issue, they have no reasonable noninfringing use and therefore their authorized sale exhausted patent rights in the completed computers under *United States* v. *Univis Lens Co.*, 316 U. S. 241 (1942). *Asustek*, *supra*, at 1598–1600. In a subsequent order limiting its summary judgment ruling, the court held that patent exhaustion applies only to apparatus or composition-of-matter claims that describe a physical object, and does not apply to process, or method, claims that describe operations to make or use a product. *LG Electronics, Inc.* v. *Asustek Com-*

*puter, Inc.*, 248 F. Supp. 2d 912, 918 (ND Cal. 2003). Because each of the LGE Patents includes method claims, exhaustion did not apply.

The Court of Appeals for the Federal Circuit affirmed in part and reversed in part. It agreed that the doctrine of patent exhaustion does not apply to method claims. In the alternative, it concluded that exhaustion did not apply because LGE did not license Intel to sell the Intel Products to Quanta for use in combination with non-Intel products. 453 F. 3d, at 1370.

We granted certiorari, 551 U. S. 1187 (2007).

## II

The longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to that item. This Court first applied the doctrine in 19th-century cases addressing patent extensions on the Woodworth planing machine. Purchasers of licenses to sell and use the machine for the duration of the original patent term sought to continue using the licenses through the extended term. The Court held that the extension of the patent term did not affect the rights already secured by purchasers who bought the item for use "in the ordinary pursuits of life." *Bloomer* v. *McQuewan*, 14 How. 539, 549 (1853); see also *ibid.* ("[W]hen the machine passes to the hands of the purchaser, it is no longer within the limits of the monopoly"); *Bloomer* v. *Millinger*, 1 Wall. 340, 351 (1864). In *Adams* v. *Burke*, 17 Wall. 453 (1873), the Court affirmed the dismissal of a patent holder's suit alleging that a licensee had violated postsale restrictions on where patented coffin lids could be used. "[W]here a person ha[s] purchased a patented machine of the patentee or his assignee," the Court held, "this purchase carrie[s] with it the right to the use of that machine so long as it [is] capable of use." *Id.*, at 455.

Although the Court permitted postsale restrictions on the use of a patented article in *Henry* v. *A. B. Dick Co.*, 224 U. S.

1 (1912),[2] that decision was short lived. In 1913, the Court refused to apply *A. B. Dick* to uphold price-fixing provisions in a patent license. See *Bauer & Cie* v. *O'Donnell*, 229 U. S. 1, 14–17 (1913). Shortly thereafter, in *Motion Picture Patents Co.* v. *Universal Film Mfg. Co.*, 243 U. S. 502, 518 (1917), the Court explicitly overruled *A. B. Dick*. In that case, a patent holder attempted to limit purchasers' use of its film projectors to show only film made under a patent held by the same company. The Court noted the "increasing frequency" with which patent holders were using *A. B. Dick*-style licenses to limit the use of their products and thereby using the patents to secure market control of related, unpatented items. 243 U. S., at 509, 516–517. Observing that "the primary purpose of our patent laws is not the creation of private fortunes for the owners of patents but is 'to promote the progress of science and useful arts,'" *id.*, at 511 (quoting U. S. Const., Art. I, §8, cl. 8), the Court held that "the scope of the grant which may be made to an inventor in a patent, pursuant to the [patent] statute, must be limited to the invention described in the claims of his patent," 243 U. S., at 511. Accordingly, it reiterated the rule that "the right to vend is exhausted by a single, unconditional sale, the article sold being thereby carried outside the monopoly of the patent law and rendered free of every restriction which the vendor may attempt to put upon it." *Id.*, at 516.

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[2] The A. B. Dick Company sold mimeograph machines with an attached license stipulating that the machine could be used only with ink, paper, and other supplies made by the A. B. Dick Company. The Court rejected the notion that a patent holder "can only keep the article within the control of the patent by retaining the title," *A. B. Dick*, 224 U. S., at 18, and held that "any . . . reasonable stipulation, not inherently violative of some substantive law," was "valid and enforceable," *id.*, at 31. The only requirement, the Court held, was that "the purchaser must have notice that he buys with only a qualified right of use," so that a sale made without conditions resulted in "an unconditional title to the machine, with no limitations upon the use." *Id.*, at 26.

This Court most recently discussed patent exhaustion in *Univis*, 316 U. S. 241, on which the District Court relied. Univis Lens Company, the holder of patents on eyeglass lenses, licensed a purchaser to manufacture lens blanks[3] by fusing together different lens segments to create bi- and trifocal lenses and to sell them to other Univis licensees at agreed-upon rates. Wholesalers were licensed to grind the blanks into the patented finished lenses, which they would then sell to Univis-licensed prescription retailers for resale at a fixed rate. Finishing retailers, after grinding the blanks into patented lenses, would sell the finished lenses to consumers at the same fixed rate. The United States sued Univis under the Sherman Act, 15 U. S. C. §§ 1, 3, 15, alleging unlawful restraints on trade. Univis asserted its patent monopoly rights as a defense to the antitrust suit. The Court granted certiorari to determine whether Univis' patent monopoly survived the sale of the lens blanks by the licensed manufacturer and therefore shielded Univis' pricing scheme from the Sherman Act.

The Court assumed that the Univis patents containing claims for finished lenses were practiced in part by the wholesalers and finishing retailers who ground the blanks into lenses, and held that the sale of the lens blanks exhausted the patents on the finished lenses. *Univis*, 316 U. S., at 248–249. The Court explained that the lens blanks "embodi[ed] essential features of the patented device and [were] without utility until . . . ground and polished as the finished lens of the patent." *Id.*, at 249. The Court noted that

> "where one has sold an uncompleted article which, because it embodies essential features of his patented invention, is within the protection of his patent, and has

[3] Lens blanks are "rough opaque pieces of glass of suitable size, design and composition for use, when ground and polished, as multifocal lenses in eyeglasses." *Univis*, 316 U. S., at 244.

> destined the article to be finished by the purchaser in conformity to the patent, he has sold his invention so far as it is or may be embodied in that particular article." *Id.*, at 250–251.

In sum, the Court concluded that the traditional bar on patent restrictions following the sale of an item applies when the item sufficiently embodies the patent—even if it does not completely practice the patent—such that its only and intended use is to be finished under the terms of the patent.

With this history of the patent exhaustion doctrine in mind, we turn to the parties' arguments.

## III

### A

LGE argues that the exhaustion doctrine is inapplicable here because it does not apply to method claims, which are contained in each of the LGE Patents. LGE reasons that, because method patents are linked not to a tangible article but to a process, they can never be exhausted through a sale. Rather, practicing the patent—which occurs upon each use of an article embodying a method patent—is permissible only to the extent rights are transferred in an assignment contract. Quanta, in turn, argues that there is no reason to preclude exhaustion of method claims, and points out that both this Court and the Federal Circuit have applied exhaustion to method claims. It argues that any other rule would allow patent holders to avoid exhaustion entirely by inserting method claims in their patent specifications.

Quanta has the better of this argument. Nothing in this Court's approach to patent exhaustion supports LGE's argument that method patents cannot be exhausted. It is true that a patented method may not be sold in the same way as an article or device, but methods nonetheless may be "embodied" in a product, the sale of which exhausts patent rights. Our precedents do not differentiate transactions involving embodiments of patented methods or processes from

those involving patented apparatuses or materials. To the contrary, this Court has repeatedly held that method patents were exhausted by the sale of an item that embodied the method. In *Ethyl Gasoline Corp.* v. *United States*, 309 U. S. 436, 446, 457 (1940), for example, the Court held that the sale of a motor fuel produced under one patent also exhausted the patent for a method of using the fuel in combustion motors.[4] Similarly, as previously described, *Univis* held that the sale of optical lens blanks that partially practiced a patent exhausted the method patents that were not completely practiced until the blanks were ground into lenses. 316 U. S., at 248–251.

These cases rest on solid footing. Eliminating exhaustion for method patents would seriously undermine the exhaustion doctrine. Patentees seeking to avoid patent exhaustion could simply draft their patent claims to describe a method rather than an apparatus.[5] Apparatus and method claims "may approach each other so nearly that it will be difficult to distinguish the process from the function of the apparatus." *United States ex rel. Steinmetz* v. *Allen*, 192 U. S. 543, 559 (1904). By characterizing their claims as method instead of apparatus claims, or including a method claim for the ma-

[4] The patentee held patents for (1) a fluid additive increasing gasoline efficiency, (2) motor fuel produced by mixing gasoline with the patented fluid, and (3) a method of using fuel containing the patented fluid in combustion motors. *Ethyl Gasoline Corp.*, 309 U. S., at 446. The patentee sold only the fluid, but attempted to control sales of the treated fuel. *Id.*, at 459. The Court held that the sale of the fluid to refiners relinquished the patentee's exclusive rights to sell the treated fuel. *Id.*, at 457.

[5] One commentator recommends this strategy as a way to draft patent claims that "will survive numerous transactions regarding the patented good, allowing the force of the patent to intrude deeply into the stream of commerce." Thomas, Of Text, Technique, and the Tangible: Drafting Patent Claims Around Patent Rules, 17 J. Marshall J. Computer & Info. L. 219, 252 (1998); see also *id.*, at 225–226 (advocating the conversion of apparatus claims into method claims and noting that "[e]ven the most novice claims drafter would encounter scant difficulty in converting a patent claim from artifact to technique and back again").

chine's patented method of performing its task, a patent drafter could shield practically any patented item from exhaustion.

This case illustrates the danger of allowing such an end-run around exhaustion. On LGE's theory, although Intel is authorized to sell a completed computer system that practices the LGE Patents, any downstream purchasers of the system could nonetheless be liable for patent infringement. Such a result would violate the longstanding principle that, when a patented item is "once lawfully made and sold, there is no restriction on [its] *use* to be implied for the benefit of the patentee." *Adams*, 17 Wall., at 457. We therefore reject LGE's argument that method claims, as a category, are never exhaustible.

B

We next consider the extent to which a product must embody a patent in order to trigger exhaustion. Quanta argues that, although sales of an incomplete article do not necessarily exhaust the patent in that article, the sale of the microprocessors and chipsets exhausted LGE's patents in the same way the sale of the lens blanks exhausted the patents in *Univis*. Just as the lens blanks in *Univis* did not fully practice the patents at issue because they had not been ground into finished lenses, Quanta observes, the Intel Products cannot practice the LGE Patents—or indeed, function at all—until they are combined with memory and buses in a computer system. If, as in *Univis*, patent rights are exhausted by the sale of the incomplete item, then LGE has no postsale right to require that the patents be practiced using only Intel parts. Quanta also argues that exhaustion doctrine will be a dead letter unless it is triggered by the sale of components that essentially, even if not completely, embody an invention. Otherwise, patent holders could authorize the sale of computers that are complete with the exception of one minor step—say, inserting the microprocessor

into a socket—and extend their rights through each downstream purchaser all the way to the end user.

LGE, for its part, argues that *Univis* is inapplicable here for three reasons. First, it maintains that *Univis* should be limited to products that contain all the physical aspects needed to practice the patent. On that theory, the Intel Products cannot embody the patents because additional physical components are required before the patents can be practiced. Second, LGE asserts that in *Univis* there was no "patentable distinction" between the lens blanks and the patented finished lenses since they were both subject to the same patent. Brief for Respondent 14 (citing *Univis*, *supra*, at 248–252). In contrast, it describes the Intel Products as "independent and distinct products" from the systems using the LGE Patents and subject to "independent patents." Brief for Respondent 13. Finally, LGE argues that *Univis* does not apply because the Intel Products are analogous to individual elements of a combination patent, and allowing sale of those components to exhaust the patent would impermissibly "ascrib[e] to one element of the patented combination the status of [the] patented invention in itself." *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U. S. 336, 344–345 (1961).

We agree with Quanta that *Univis* governs this case. As the Court there explained, exhaustion was triggered by the sale of the lens blanks because their only reasonable and intended use was to practice the patent and because they "embodie[d] essential features of [the] patented invention." 316 U. S., at 249–251. Each of those attributes is shared by the microprocessors and chipsets Intel sold to Quanta under the License Agreement.

First, *Univis* held that "the authorized sale of an article which is capable of use only in practicing the patent is a relinquishment of the patent monopoly with respect to the article sold." *Id.*, at 249. The lens blanks in *Univis* met

this standard because they were "without utility until [they were] ground and polished as the finished lens of the patent." *Ibid.* Accordingly, "the only object of the sale [was] to enable the [finishing retailer] to grind and polish it for use as a lens by the prospective wearer." *Ibid.* Here, LGE has suggested no reasonable use for the Intel Products other than incorporating them into computer systems that practice the LGE Patents.[6] Nor can we discern one: A microprocessor or chipset cannot function until it is connected to buses and memory. And here, as in *Univis*, the only apparent object of Intel's sales to Quanta was to permit Quanta to incorporate the Intel Products into computers that would practice the patents.

Second, the lens blanks in *Univis* "embodie[d] essential features of [the] patented invention." *Id.*, at 250–251. The essential, or inventive, feature of the Univis lens patents was the fusing together of different lens segments to create bi- and trifocal lenses. The finishing process performed by the finishing and prescription retailers after the fusing was not unique. As the United States explained:

> "The finishing licensees finish Univis lens blanks in precisely the same manner as they finish all other bifocal lens blanks. Indeed, appellees have never contended that their licensing system is supported by patents covering methods or processes relating to the finishing of

[6] LGE suggests that the Intel Products would not infringe its patents if they were sold overseas, used as replacement parts, or engineered so that use with non-Intel products would disable their patented features. Brief for Respondent 21–22, n. 10. But *Univis* teaches that the question is whether the product is "capable of use only in *practicing* the patent," not whether those uses are infringing. 316 U. S., at 249 (emphasis added). Whether outside the country or functioning as replacement parts, the Intel Products would still be *practicing* the patent, even if not infringing it. And since the features partially practicing the patent are what must have an alternative use, suggesting that they be disabled is no solution. The disabled features would have no real *use*.

> lens blanks. Consequently, it appears that appellees perform all of the operations which contribute any claimed element of novelty to Univis lenses." Brief for United States in *United States* v. *Univis Lens Co.*, O. T. 1941, No. 855 etc., p. 10 (footnote and citations omitted).

While the Court assumed that the finishing process was covered by the patents, *Univis*, *supra*, at 248–249, and the District Court found that it was necessary to make a working lens, *United States* v. *Univis Lens Co.*, 41 F. Supp. 258, 262–263 (SDNY 1941), the grinding process was not central to the patents. That standard process was not included in detail in any of the patents and was not referred to at all in two of the patents. Those that did mention the finishing process treated it as incidental to the invention, noting, for example, that "[t]he blank is then ground in the usual manner," U. S. Patent No. 1,876,497, p. 2, or simply that the blank is "then ground and polished," U. S. Patent No. 1,632,208, p. 1, Tr. of Record in *United States* v. *Univis Lens Co.*, O. T. 1941, No. 855 etc., pp. 516, 498.

Like the Univis lens blanks, the Intel Products constitute a material part of the patented invention and all but completely practice the patent. Here, as in *Univis*, the incomplete article substantially embodies the patent because the only step necessary to practice the patent is the application of common processes or the addition of standard parts. Everything inventive about each patent is embodied in the Intel Products. They control access to main and cache memory, practicing the '641 and '379 patents by checking cache memory against main memory and comparing read and write requests. They also control priority of bus access by various other computer components under the '733 patent. Naturally, the Intel Products cannot carry out these functions unless they are attached to memory and buses, but those additions are standard components in the system, providing the material that enables the microprocessors and chipsets to

function. The Intel Products were specifically designed to function only when memory or buses are attached; Quanta was not required to make any creative or inventive decision when it added those parts. Indeed, Quanta had no alternative but to follow Intel's specifications in incorporating the Intel Products into its computers because it did not know their internal structure, which Intel guards as a trade secret. Brief for Petitioners 3. Intel all but practiced the patent itself by designing its products to practice the patents, lacking only the addition of standard parts.

We are unpersuaded by LGE's attempts to distinguish *Univis*. First, there is no reason to distinguish the two cases on the ground that the articles in *Univis* required the *removal* of material to practice the patent while the Intel Products require the *addition* of components to practice the patent. LGE characterizes the lens blanks and lenses as sharing a "basic nature" by virtue of their physical similarity, while the Intel Products embody only some of the "patentably distinct elements and steps" involved in the LGE Patents. Brief for Respondent 26–27. But we think that the nature of the final step, rather than whether it consists of adding or deleting material, is the relevant characteristic. In each case, the final step to practice the patent is common and noninventive: grinding a lens to the customer's prescription, or connecting a microprocessor or chipset to buses or memory. The Intel Products embody the essential features of the LGE Patents because they carry out all the inventive processes when combined, according to their design, with standard components.

With regard to LGE's argument that exhaustion does not apply across patents, we agree on the general principle: The sale of a device that practices patent A does not, by virtue of practicing patent A, exhaust patent B. But if the device practices patent A *while substantially embodying* patent B, its relationship to patent A does not prevent exhaustion of patent B. For example, if the Univis lens blanks had been

composed of shatter-resistant glass under patent A, the blanks would nonetheless have substantially embodied, and therefore exhausted, patent B for the finished lenses. This case is no different. While each Intel microprocessor and chipset practices thousands of individual patents, including some LGE patents not at issue in this case, the exhaustion analysis is not altered by the fact that more than one patent is practiced by the same product. The relevant consideration is whether the Intel Products that partially practice a patent—by, for example, embodying its essential features—exhaust *that* patent.

Finally, LGE's reliance on *Aro* is misplaced because that case dealt only with the question whether replacement of one part of a patented combination infringes the patent. First, the replacement question is not at issue here. Second, and more importantly, *Aro* is not squarely applicable to the exhaustion of patents like the LGE Patents that do not disclose a new combination of existing parts. *Aro* described combination patents as "cover[ing] only the totality of the elements in the claim [so] that no element, separately viewed, is within the grant." 365 U. S., at 344; see also *Mercoid Corp.* v. *Mid-Continent Investment Co.*, 320 U. S. 661, 667–668 (1944) (noting that, in a combination patent, "the combination is the invention and it is distinct from any" of its elements). *Aro*'s warning that no element can be viewed as central to or equivalent to the invention is specific to the context in which the combination itself is the only inventive aspect of the patent. In this case, the inventive part of the patent is not the fact that memory and buses are combined with a microprocessor or chipset; rather, it is included in the design of the Intel Products themselves and the way these products access the memory or bus.

## C

Having concluded that the Intel Products embodied the patents, we next consider whether their sale to Quanta ex-

hausted LGE's patent rights. Exhaustion is triggered only by a sale authorized by the patent holder. *Univis*, 316 U. S., at 249.

LGE argues that there was no authorized sale here because the License Agreement does not permit Intel to sell its products for use in combination with non-Intel products to practice the LGE Patents. It cites *General Talking Pictures Corp.* v. *Western Elec. Co.*, 304 U. S. 175 (1938), and *General Talking Pictures Corp.* v. *Western Elec. Co.*, 305 U. S. 124 (1938), in which the manufacturer sold patented amplifiers for commercial use, thereby breaching a license that limited the buyer to selling the amplifiers for private and home use. The Court held that exhaustion did not apply because the manufacturer had no authority to sell the amplifiers for commercial use, and the manufacturer "could not convey to petitioner what both knew it was not authorized to sell." 304 U. S., at 181. LGE argues that the same principle applies here: Intel could not convey to Quanta what both knew it was not authorized to sell, *i. e.*, the right to practice the patents with non-Intel parts.

LGE overlooks important aspects of the structure of the Intel-LGE transaction. Nothing in the License Agreement restricts Intel's right to sell its microprocessors and chipsets to purchasers who intend to combine them with non-Intel parts. It broadly permits Intel to "'make, use, [or] sell'" products free of LGE's patent claims. Brief for Petitioners 8 (quoting App. 154). To be sure, LGE did require Intel to give notice to its customers, including Quanta, that LGE had not licensed those customers to practice its patents. But neither party contends that Intel breached the agreement in that respect. Brief for Petitioners 9; Brief for Respondent 9. In any event, the provision requiring notice to Quanta appeared only in the Master Agreement, and LGE does not suggest that a breach of that agreement would constitute a breach of the License Agreement. Hence, Intel's authority to sell its products embodying the LGE Patents

was not conditioned on the notice or on Quanta's decision to abide by LGE's directions in that notice.

LGE points out that the License Agreement specifically disclaimed any license to third parties to practice the patents by combining licensed products with other components. Brief for Petitioners 8. But the question whether third parties received implied licenses is irrelevant because Quanta asserts its right to practice the patents based not on implied license but on exhaustion. And exhaustion turns only on Intel's own license to sell products practicing the LGE Patents.

Alternatively, LGE invokes the principle that patent exhaustion does not apply to postsale restrictions on "making" an article. Brief for Respondent 43. But this is simply a rephrasing of its argument that combining the Intel Products with other components adds more than standard finishing to complete a patented article. As explained above, making a product that substantially embodies a patent is, for exhaustion purposes, no different from making the patented article itself. In other words, no further "making" results from the addition of standard parts—here, the buses and memory—to a product that already substantially embodies the patent.

The License Agreement authorized Intel to sell products that practiced the LGE Patents. No conditions limited Intel's authority to sell products substantially embodying the patents. Because Intel was authorized to sell its products to Quanta, the doctrine of patent exhaustion prevents LGE from further asserting its patent rights with respect to the patents substantially embodied by those products.[7]

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[7] We note that the authorized nature of the sale to Quanta does not necessarily limit LGE's other contract rights. LGE's complaint does not include a breach-of-contract claim, and we express no opinion on whether contract damages might be available even though exhaustion operates to eliminate patent damages. See *Keeler* v. *Standard Folding Bed Co.*, 157 U. S. 659, 666 (1895) ("Whether a patentee may protect himself and his assignees by special contracts brought home to the purchasers is not a

## IV

The authorized sale of an article that substantially embodies a patent exhausts the patent holder's rights and prevents the patent holder from invoking patent law to control post-sale use of the article. Here, LGE licensed Intel to practice any of its patents and to sell products practicing those patents. Intel's microprocessors and chipsets substantially embodied the LGE Patents because they had no reasonable non-infringing use and included all the inventive aspects of the patented methods. Nothing in the License Agreement limited Intel's ability to sell its products practicing the LGE Patents. Intel's authorized sale to Quanta thus took its products outside the scope of the patent monopoly, and as a result, LGE can no longer assert its patent rights against Quanta. Accordingly, the judgment of the Court of Appeals is reversed.

*It is so ordered.*

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question before us, and upon which we express no opinion. It is, however, obvious that such a question would arise as a question of contract, and not as one under the inherent meaning and effect of the patent laws").