2017 Summer/Fall Supplement

for

Merges & Duffy: Patent Law and Policy (7th ed. 2017)

Carolina Academic Press
700 Kent Street
Durham, North Carolina 27701
Telephone (919) 489-7486
Fax (919) 493-5668
E-mail: cap@cap-press.com
www.cap-press.com

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Chapter 1: Introduction

Chap. 1.A. Historical Overview of Patent Law

Update on Supreme Court Patent Cases

On pages 15-16, replace the charts set forth in the text with these new updated charts:

Figure 1-1. Average Number of Supreme Court Cases per Term, 1950 - 2016

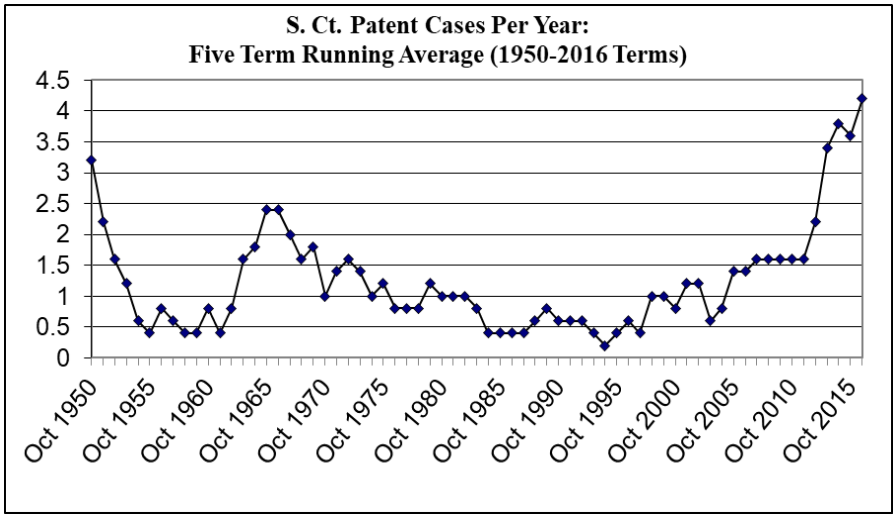
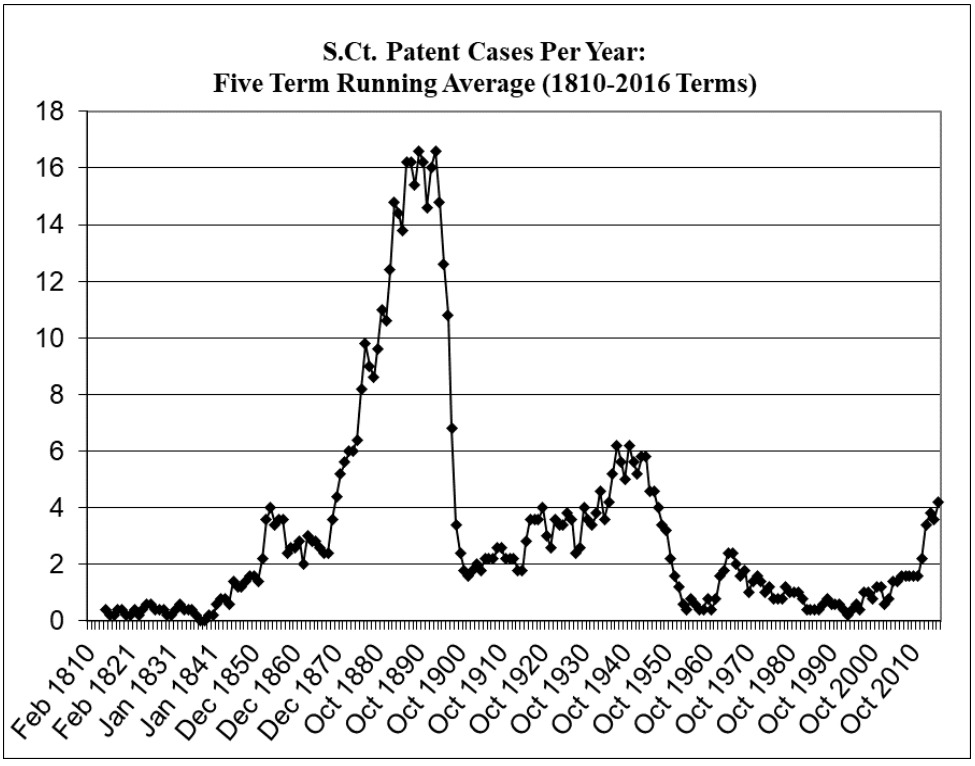


Figure 1-1. Average Number of Supreme Court Cases per Term, 1800 - 2016



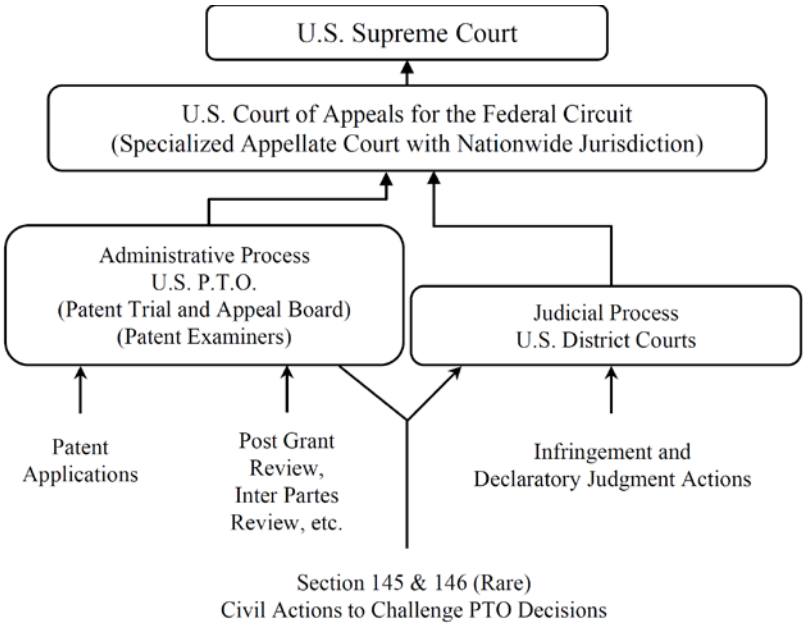
As the updated charts show, the Supreme Court's interest in patent law continues to grow. In its 2016 Term, the Supreme Court decided six cases on patent law, many of which are discussed in this casebook supplement. For the 2017 Term, the Court has already granted certiorari in two cases, including one involving a major constitutional challenge to the PTO's *inter partes* review process. *See Oil States Energy Servs., LLC v. Greene's Energy Grp., LLC*, 2017 U.S. LEXIS 3727 (cert. granted June 12, 2017); *see also SAS v. Matal* (No. 16-969, cert. granted May 22, 2017) (presenting the statutory issue whether the PTO may institute *inter partes* review on only some of the claims in a patent). In two more cases, the Court has called for the views of the Solicitor General (a "CVSG"), which is often a step towards granting certiorari. *See Samsung Electronics Co., Ltd. v. Apple Inc.* (No. 16-1102 CVSG June 26, 2017) (presenting issues of obviousness, injunctive relief and infringement); *WesternGeco LLC v. ION Geophysical Corp.* (No. 16-1011 CVSG May 30, 2017) (presenting the issue whether lost profits damages are categorically unavailable where patent infringement is proven under 35 U.S.C. § 271(f)).

Chap. 1.D Overview of Patent Rights and Patent Process

Revised Figure on the Legal Process of the U.S. Patent System

On page 57, replace Figure 1-7 with the following new Figure:

Figure 1-7. The Legal Process of the U.S. Patent System



Chap. 1.D.3 Post-Issuance Administrative Processes

On page 63, add the following note at the end of the section on post-issuance administrative processes:

Note on a Constitutional Challenge to Post-Issuance Administrative Processes

In June of 2017, the Supreme Court granted certiorari in *Oil States Energy Servs., LLC v. Greene's Energy Grp., LLC*, 2017 U.S. LEXIS 3727 (June 12, 2017)—a case with the potential to upend many of the new post-issuance administrative processes authorized in the 2011 America Invents Act. The question presented in the case is:

> Whether inter partes review, an adversarial process used by the Patent and Trademark Office (PTO) to analyze the validity of existing patents, violates the Constitution by extinguishing private property rights through a non-Article III forum without a jury.

The basic theory of the petitioner in the case is that, once the U.S. PTO grants a patent, the validity of the issued patent cannot be challenged in an administrative forum, or at least it cannot be challenged administratively without the consent of the patentee. None of briefs on the merits of the case have yet been filed as of the writing of this supplement, so we will not attempt to summarize the positions of the parties. When filed, the briefs in the case will be available at http://www.scotusblog.com/case-files/cases/oil-states-energy-services-llc-v-greenes-energy-group-llc/.

Sheer numbers demonstrate the importance of the case. Over the past five years, more than 7,000 petitions for some form of post-issuance review have been filed, and the agency has instituted an administrative trial in more than half the cases. *See* https://www.uspto.gov/sites/default/files/documents/trial_statistics_june2017.pdf. Moreover, among the more than 1,600 cases that have reached a final decision so far, the agency has invalidated *all* of the reviewed claims in 65% of cases and at least one of the claims in more than 80% of the cases. Post-issuance administrative processes are thus a highly effective way either to weed out low quality patents (from the perspective of accused infringers) or to undermine the security of property rights (from the perspective of patentees). The *Oil States* case could hold the entirety of the system unconstitutional so, to put it mildly, the stakes are high.

Chapter 2: Patentable Subject Matter

Chap. 2.D. Abstract Ideas

On page 165, add the new case:

McRO, Inc. v. Bandai Namco Games Am. Inc.
837 F.3d 1299 (Fed. Cir. 2016)

REYNA, *Circuit Judge*.

This appeal is from a grant of judgment on the pleadings under Fed. R. Civ. P. 12(c) that the asserted claims of U.S. Patent Nos. 6,307,576 ("the '576 patent") and 6,611,278 ("the '278 patent") are invalid. The United States District Court for the Central District of California found that the asserted claims are directed to patent-ineligible subject matter and are therefore invalid under 35 U.S.C. § 101 ("§ 101"). *McRO, Inc. v. Sony Computer Entm't Am., LLC*, 55 F. Supp. 3d 1214 (C.D. Cal. 2014) ("*Patentability Op.*"). We hold that the ordered combination of claimed steps, using unconventional rules that relate sub-sequences of phonemes, timings, and morph weight sets, is not directed to an abstract idea and is therefore patent-eligible subject matter under § 101. Accordingly, we *reverse*.

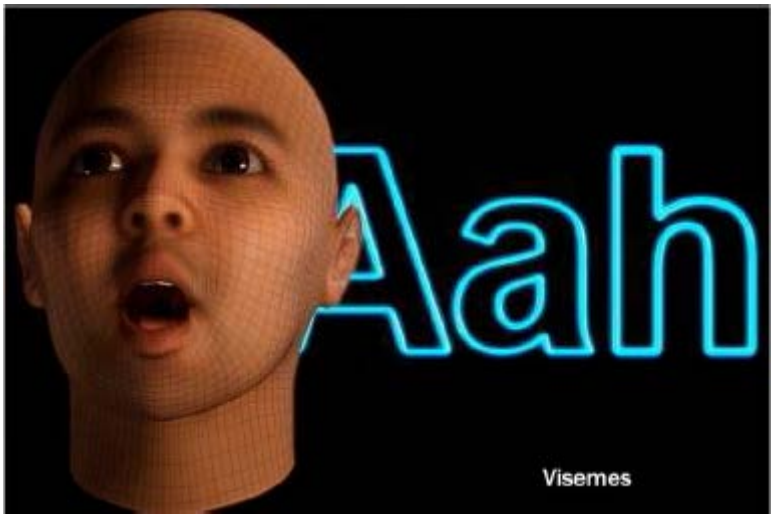
I. Background

A. Factual Background

The '576 patent and the '278 patent were both issued to Maury Rosenfeld and are both titled "Method for Automatically Animating Lip Synchronization and Facial Expression of Animated Characters." The '278 patent is a continuation of the '576 patent and shares the same written description.

1. Admitted Prior Art

The patents relate to automating part of a preexisting 3-D animation method. As explained in the background of the patents, the admitted prior art method uses multiple 3-D models of a character's face to depict various facial expressions made during speech. *See generally* '576 patent col. 1 l. 14 to col. 2 l. 37. To animate the character as it speaks, the method morphs the character's expression between the models. The "neutral model" is the 3-D representation of the resting, neutral facial expression of an animated character. The other models of the character's face are known as "morph targets," and each one represents that face as it pronounces a phoneme, i.e., makes a certain sound. This visual representation of the character's face making a sound is also called a "viseme." An example morph target for the "ahh" phoneme is shown below. Each of these morph targets and the neutral model has identified points, called "vertices," in certain places on the face. The set of differences in the location of these vertices (and the corresponding point on the face) between the neutral model and the morph target form a "delta set" of vectors representing the change in location of the vertices between the two models. For each morph target, there is a corresponding delta set consisting of the vectors by which the vertices on that morph target differ from the neutral model.



Facial expressions are described as a function of the amount each morph target, and its corresponding delta set, is applied to modify the character model. “In producing animation products, a value usually from 0 to 1 is assigned to each delta set by the animator and the value is called the ‘morph weight.’“ ‘576 patent col. 1 ll. 63-65. The set of morph weights for all the delta sets is called a “morph weight set.” The neutral model is represented by a morph weight set with all morph weights of 0. A desired morph target is represented by the morph weight of 1 for that morph target’s delta set and a morph weight of 0 for all other delta sets.

The power of this prior art animation method is in generating intermediate faces by using morph weights between 0 and 1 to blend together multiple morph targets. For example, the face halfway between the neutral model and the “oh” face can be expressed simply by setting the “oh” morph weight to 0.5, i.e., 50%, as shown below at the left. The model halfway to the next syllable, in turn, could be expressed by setting both the “oh” morph weight and that for the next syllable each to 0.5, creating a blend of those two delta sets. For each morph weight set, the resulting facial expression is calculated by determining the displacement of each vertex from the neutral model as the product of the morph weights in the morph weight set and the corresponding delta sets for the morph targets. ‘576 patent col. 2 ll. 2-15.

Animation of the character and lip synchronization preexisting the invention was generally accomplished by an animator with the assistance of a computer. Animators used “a ‘keyframe’ approach, where the artist set[] the appropriate [morph] weights at certain important times (‘keyframes’)” instead of at every frame. ‘576 patent col. 2 ll. 31-33. Animators knew

what phoneme a character pronounced at a given time from a "time aligned phonetic transcription" ("timed transcript"). This listed the "occurrence in time" of each phoneme the character pronounced, as shown in the example below. *Id.* at col. 1 ll. 32-34.

time (sec)	phoneme	word
0		Sil
1.895	h	hello
1.965	eh	
1.995	l	
2.105	o	
2.137	w	
2.165	dh	there
2.235	eh	
2.335	r	
2.435	sil	
2.475	h	how
2.545	a	
2.601	w	
2.635	AA	are
2.66	r	
2.695	y	you
2.835	uw	
2.885	t	today
2.945	ah	
2.985	d	
3.045	e	
3.16	y	
3.225	sil	

Animators, using a computer, manually determined the appropriate morph weight sets for each keyframe based on the phoneme timings in the timed transcript. "For each keyframe, the artist would look at the screen and, relying on her judgment, manipulate the character model until it looked right—a visual and subjective process." McRO Reply Br. 4 (emphasis removed); Defs.' Br. 10 ("Using the [timed transcript], the animator would decide what the animated face should look like at key points in time between the start and end times, and then 'draw' the face at those times."). Because the pronounced phoneme and drawn keyframe corresponded in time, this prior art process synchronized the lips and facial expression of the 3-D character. A computer program would then interpolate between the keyframes set by the animator, creating the intermediate frames by determining the appropriate morph weight sets at intermediate points in time simply based on continuously transitioning between the keyframes. '576 patent col. 2 ll. 32-36.

2. Claimed Invention

The patents criticize the preexisting keyframe approach as "very tedious and time consuming, as well as inaccurate due to the large number of keyframes necessary to depict speech." '576 patent col. 2 ll. 35-37. They suggest the present invention overcomes many of the deficiencies of the prior art and obtains its objectives by providing an integrated method embodied in computer software for use with a computer for the rapid, efficient lip synchronization and manipulation of character facial expressions, thereby allowing for rapid, creative, and expressive animation products to be produced in a very cost effective manner.

Id. at col. 2 ll. 38-44. "Accordingly, it is the primary object of this invention to provide a method for automatically . . . producing accurate and realistic lip synchronization and facial expressions in animated characters." *Id.* at col. 2 ll. 45-50.

Essentially, the patents aim to automate a 3-D animator's tasks, specifically, determining when to set keyframes and setting those keyframes. This automation is accomplished through rules that are applied to the timed transcript to determine the morph weight outputs. The patents describe many exemplary rule sets that go beyond simply matching single phonemes from the timed transcript with the appropriate morph target. Instead, these rule sets aim to produce more realistic speech by "tak[ing] into consideration the differences in mouth positions for similar phonemes based on context." *Id.* at col. 10 ll. 6-7.

One exemplary set of rules provided and applied in the specification of the '576 patent is for a character transitioning from silence through saying "hello." *See* '576 patent col. 7 l. 36 to col. 9 l. 22. This exemplary set of rules provides for inserting a transition starting shortly before the first syllable after a silence. *Id.* at col. 8 ll. 24-28. The transition marks when the character begins to transition from silence, shown by the closed-mouthed neutral model, to the morph target for the first syllable, with its open-mouthed shape. *Id.* at col. 8 ll. 61-63. That is, the rule automates a character's facial expressions so the character will wait until shortly before it starts speaking to begin opening its mouth. In terms of the prior art method, the effect of this rule is to automatically create a keyframe at a point that no phoneme is being pronounced. *Id.* at col. 9 ll. 10-11. If instead no transition were placed at that position, the resulting animation would have an unrealistic quality. The character would open its mouth gradually from the beginning of the sequence through its first utterance as a result of the computer interpolating a continuous transition between those two points. In the prior art system, an animator would have to subjectively identify the problematic sequence and manually fix it by adding an appropriate keyframe. The invention, however, uses rules to automatically set a keyframe at the correct point to depict more realistic speech, achieving results similar to those previously achieved manually by animators.

Claim 1 of the '576 patent is representative and dispositive of the asserted claims for the purposes of appeal:

> A method for automatically animating lip synchronization and facial expression of three-dimensional characters comprising:
>
> > obtaining a first set of rules that define output morph weight set stream as a function of phoneme sequence and time of said phoneme sequence;
> >
> > obtaining a timed data file of phonemes having a plurality of sub-sequences;
> >
> > generating an intermediate stream of output morph weight sets and a plurality of transition parameters between two adjacent morph weight sets by evaluating said plurality of sub-sequences against said first set of rules;
> >
> > generating a final stream of output morph weight sets at a desired frame rate from said intermediate stream of output morph weight sets and said plurality of transition parameters; and

> applying said final stream of output morph weight sets to a sequence of animated characters to produce lip synchronization and facial expression control of said animated characters.

'576 patent, cl. 1, col. 11 ll. 27-47.

B. Procedural History

[The district court for the Central District of California held all asserted claims ineligible for patent protection under 35 U.S.C. § 101. McRO appealed.]

II. Parties' Arguments

The parties' principal dispute is over the meaning and application of two Supreme Court cases in light of *Alice* [*Corp. v. CLS Bank*, 134 S. Ct. 2347 (2014)]: *Parker v. Flook*, 437 U.S. 584 (1978) ("*Flook*") and *Diamond v. Diehr*, 450 U.S. 175 (1981) ("*Diehr*"). Both cases addressed the patentability of process claims that include steps requiring calculation.

[After summarizing the parties' positions and holding that a *de novo* standard applies to review of patent ineligibility issues under § 101, the court turned to its analysis.]

IV. Discussion

A. Claim Interpretation

As an initial matter, we note that, in this case, claim construction is helpful to resolve the question of patentability under § 101. Specifically, the parties' dispute about whether the "first set of rules" must evaluate sequential phonemes or can evaluate individual phonemes is resolved by the claim language. We agree with McRO that the claims are limited to rules that evaluate sub-sequences consisting of multiple sequential phonemes. This limitation is apparent on the face of the claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). In particular, the intermediate morph weight sets and transition parameters are generated "by evaluating said plurality of sub-sequences against said first set of rules." '576 patent, cl. 1, col. 11 ll. 36-39. This limitation could not be satisfied by rules that only evaluate individual phonemes. Instead, the claimed "first set of rules" must be formulated to evaluate sub-sequences of phonemes.

B. Patentability Under § 101

Section 101 defines patent eligible subject matter as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof," subject to the other limitations of the Patent Act. Apart from the Patent Act, the courts have created exceptions to the literal scope of § 101. "Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice*, 134 S. Ct. at 2354 (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107 (2013) ("*Myriad*")). This appeal involves the abstract idea exception.

In *Alice*, the Court applied a two-step framework for analyzing whether claims are patent eligible. First, we determine whether the claim at issue is "directed to" a judicial exception, such as an abstract idea. *Alice*, 134 S. Ct. at 2355. Mathematical formulas are a type of abstract idea. *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972) ("*Benson*"). The abstract idea

exception prevents patenting a result where "it matters not by what process or machinery the result is accomplished." *O'Reilly v. Morse*, 56 U.S. 62, 113 (1854). We do not assume that such claims are directed to patent ineligible subject matter because "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 132 S. Ct. 1289, 1293 (2012) ("*Mayo*"); *see also In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016) ("*TLI Commc'ns*"). Instead, "the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015). If the claims are not directed to an abstract idea, the inquiry ends. If the claims are "directed to" an abstract idea, then the inquiry proceeds to the second step of the *Alice* framework.

In step two we consider whether the claims contain an "inventive concept" sufficient to "transform the nature of the claim into a patent-eligible application." *Alice*, 134 S. Ct. at 2355 (quotation omitted). To do so we look to both the claim as a whole and the individual claim elements to determine whether the claims contain "an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* (quoting *Mayo*, 132 S. Ct. at 1294) (alteration in original).

In *Alice*, the Court applied some of its § 101 jurisprudence that preceded the two-step framework, including *Flook* and *Diehr*. In *Flook*, claims requiring the use of a specific equation were unpatentable because they "simply provide[d] a new and presumably better method of calculating alarm limit values." *Flook*, 437 U.S. at 594-95. The mathematical "formula itself was an abstract idea" and "the computer implementation was purely conventional" because "the 'use of computers for "automatic monitoring-alarming'" was 'well known'." *Alice*, 134 S. Ct. at 2358 (quoting *Flook*, 437 U.S. at 594). "*Flook* stands for the propositionthat the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment." *Alice*, 134 S. Ct. at 2358 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610-611 (2010) ("*Bilski*")) (internal quotation marks omitted).

The claims in *Diehr*, in contrast, were patentable. The claims likewise "employed a 'well-known' mathematical equation." *Alice*, 134 S. Ct. at 2358 (quoting *Diehr*, 450 U.S. at 177). A computer performed the calculations as part of a broader process for curing rubber, but "the process as a whole [did] not thereby become unpatentable subject matter." *Diehr*, 450 U.S. at 187. Instead, the Court looked to how the claims "used that equation in a process designed to solve a technological problem in 'conventional industry practice.'" *Alice*, 134 S. Ct. at 2358 (quoting *Diehr*, 450 U.S. at 178). When looked at as a whole, "the claims in *Diehr* were patent eligible because they improved an existing technological process, not because they were implemented on a computer." *Alice*, 134 S. Ct. at 2358.

1. Specific Limitations

The district court determined that claim 1 of the '576 patent is "drawn to the [abstract] idea of automated rules-based use of morph targets and delta sets for lip-synchronized three-dimensional animation." *Patentability Op.*, 55 F. Supp. 3d at 1226. We disagree. We have previously cautioned that courts "must be careful to avoid oversimplifying the claims" by looking at them generally and failing to account for the specific requirements of the claims. *TLI Commc'ns*, 823 F.3d at 611; *see also Diehr*, 450 U.S. at 189 n.12. Here, the claims are limited to rules with specific characteristics. As the district court recognized during claim construction, "the claims themselves set out meaningful requirements for the first set of rules: they 'define[] a morph weight set stream as a function of phoneme sequence and times associated with said

phoneme sequence.'" J.A. 4171 (Dist. Ct. Claim Construction Op. 16) (quoting '576 patent, cl. 1). They further require "applying said first set of rules to each sub-sequence . . . of timed phonemes." *Id.* Whether at step one or step two of the *Alice* test, in determining the patentability of a method, a court must look to the claims as an ordered combination, without ignoring the requirements of the individual steps. The specific, claimed features of these rules allow for the improvement realized by the invention.

As the specification confirms, the claimed improvement here is allowing computers to produce "accurate and realistic lip synchronization and facial expressions in animated characters" that previously could only be produced by human animators. '576 patent col. 2 ll. 49-50. As the district court correctly recognized, this computer automation is realized by improving the prior art through "the use of rules, rather than artists, to set the morph weights and transitions between phonemes." *Patentability Op.*, 55 F. Supp. 3d at 1227. The rules are limiting in that they define morph weight sets as a function of the timing of phoneme sub-sequences. *See, e.g.*, '576 patent col. 3 ll. 19-33. Defendants do not dispute that processes that automate tasks that humans are capable of performing are patent eligible if properly claimed; instead, they argue that the claims here are abstract because they do not claim specific rules.[12] This argument echoes the district court's finding that the claims improperly purport to cover all rules. *Patentability Op.*, at 1227. The claimed rules here, however, are limited to rules with certain common characteristics, i.e., a genus.

Claims to the genus of an invention, rather than a particular species, have long been acknowledged as patentable. *E.g.*, *Diamond v. Chakrabarty*, 447 U.S. 303, 305 (1980) (patentable claim to "a bacterium from the genus *Pseudomonas* containing therein at least two stable energy-generating plasmids, each of said plasmids providing a separate hydrocarbon degradative pathway."). Patent law has evolved to place additional requirements on patentees seeking to claim a genus; however, these limits have not been in relation to the abstract idea exception to § 101. Rather they have principally been in terms of whether the patentee has satisfied the tradeoff of broad disclosure for broad claim scope implicit in 35 U.S.C. § 112. *E.g., Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008). It is self-evident that genus claims create a greater risk of preemption, thus implicating the primary concern driving § 101 jurisprudence, but this does not mean they are unpatentable.

The preemption concern arises when the claims are not directed to a specific invention and instead improperly monopolize "the basic tools of scientific and technological work." *Alice*, 134 S. Ct. at 2354 (quoting *Myriad*, 133 S. Ct. at 2116). The abstract idea exception has been applied to prevent patenting of claims that abstractly cover results where "it matters not by what process or machinery the result is accomplished." *Morse*, 56 U.S. at 113; *see also Mayo*, 132 S. Ct. at 1301. "A patent is not good for an effect, or the result of a certain process" because such patents "would prohibit all other persons from making the same thing by any means whatsoever." *Le Roy v. Tatham*, 55 U.S. 156, 175 (1853). A patent may issue "for the means or method of producing a certain result, or effect, and not for the result or effect produced." *Diehr*, 450 U.S. 175, 182 n.7. We therefore look to whether the claims in these patents focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and

[12] *See, e.g.*, Hearing Tr. at 14:00-15:09 (Defendants' counsel acknowledging that a process for autopilot or facial recognition using rules could be patented, but arguing the claims here are unpatentable because they do not claim specific rules), *available at* http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2015-1080.mp3 .

machinery. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016) ("*Enfish*"); *see also Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, No. 2015-1570, 827 F.3d 1042 (Fed. Cir. July 5, 2016).

2. Claims Directed To

Claim 1 of the '576 patent is focused on a specific asserted improvement in computer animation, i.e., the automatic use of rules of a particular type. We disagree with Defendants' arguments that the claims simply use a computer as a tool to automate conventional activity. While the rules are embodied in computer software that is processed by general-purpose computers, Defendants provided no evidence that the process previously used by animators is the same as the process required by the claims. *See* Defs.' Br. 10-15, 39-40. In support, Defendants point to the background section of the patents, but that information makes no suggestion that animators were previously employing the type of rules required by claim 1. Defendants concede an animator's process was driven by subjective determinations rather than specific, limited mathematical rules. The prior art "animator would decide what the animated face should look like at key points in time between the start and end times, and then 'draw' the face at those times." Defs.' Br. 10. The computer here is employed to perform a distinct process to automate a task previously performed by humans. McRO states that animators would initially set keyframes at the point a phoneme was pronounced to represent the corresponding morph target as a starting point for further fine tuning. J.A. 3573 at 8:53 (McRO's Claim Construction Presentation). This activity, even if automated by rules, would not be within the scope of the claims because it does not evaluate sub-sequences, generate transition parameters or apply transition parameters to create a final morph weight set. It is the incorporation of the claimed rules, not the use of the computer, that "improved [the] existing technological process" by allowing the automation of further tasks. *Alice*, 134 S. Ct. at 2358. This is unlike *Flook*, *Bilski*, and *Alice*, where the claimed computer-automated process and the prior method were carried out in the same way. *Flook*, 437 U.S. at 585-86; *Bilski*, 561 U.S. at 611; *Alice*, 134 S. Ct. at 2356.

Further, the automation goes beyond merely "organizing [existing] information into a new form" or carrying out a fundamental economic practice. *Digitech*, 758 F.3d at 1351; *see also Alice*, 134 S. Ct. at 2356. The claimed process uses a combined order of specific rules that renders information into a specific format that is then used and applied to create desired results: a sequence of synchronized, animated characters. While the result may not be tangible, there is nothing that requires a method "be tied to a machine or transform an article" to be patentable. *Bilski*, 561 U.S. at 603 (discussing 35 U.S.C. § 100(b)). The concern underlying the exceptions to § 101 is not tangibility, but preemption. *Mayo*, 132 S. Ct. at 1301.

The limitations in claim 1 prevent preemption of all processes for achieving automated lip-synchronization of 3-D characters. McRO has demonstrated that motion capture animation provides an alternative process for automatically animating lip synchronization and facial expressions. Even so, we have recognized that "the absence of complete preemption does not demonstrate patent eligibility." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). The narrower concern here is whether the claimed genus of rules preempts all techniques for automating 3-D animation that rely on rules. Claim 1 requires that the rules be rendered in a specific way: as a relationship between sub-sequences of phonemes, timing, and the weight to which each phoneme is expressed visually at a particular timing (as represented by the morph weight set). The specific structure of the claimed rules would prevent broad preemption of all rules-based means of automating lip synchronization, unless the limits of the

rules themselves are broad enough to cover all possible approaches.[13] There has been no showing that any rules-based lip-synchronization process must use rules with the specifically claimed characteristics.

Defendants' attorney's argument that any rules-based lip-synchronization process must use the claimed type of rules has appeal, but no record evidence supports this conclusion. Defendants again rely only on the patents' description of one type of rules, but the description of one set of rules does not mean that there exists only one set of rules, and does not support the view that other possible types of rules with different characteristics do not exist. The only information cited to this court about the relationship between speech and face shape points to the conclusion that there are many other possible approaches to automating lip synchronization using rules. For example, Amicus cites Kiyoshi Honda, *Physiological Processes of Speech Processing, in Springer Handbook of Speech Production* 7 (Jacob Benesty et al. eds., 2008) ("Honda"), as support for the proposition that the claimed rules reflect natural laws. Amicus Public Knowledge Br. 12. Honda shows, however, that the interaction between vocalization and facial expression is very complex, and there are relationships present other than those required by the claimed rules. Honda at 24 ("Physiological processes during speech are multidimensional in nature as described in this chapter."). This complex interaction permits development of alternative rules-based methods of animating lip synchronization and facial expressions of three-dimensional characters, such as simulating the muscle action underlying characters' facial expressions. Under these circumstances, therefore, we need not assume that future alternative discoveries are foreclosed.

Here, the structure of the limited rules reflects a specific implementation not demonstrated as that which "any [animator] engaged in the search for [an automation process] would likely have utilized." *Myriad*, 133 S. Ct. at 2119-20 (quotation marks omitted). By incorporating the specific features of the rules as claim limitations, claim 1 is limited to a specific process for automatically animating characters using particular information and techniques and does not preempt approaches that use rules of a different structure or different techniques. *See Morse*, 56 U.S. at 113. When looked at as a whole, claim 1 is directed to a patentable, technological improvement over the existing, manual 3-D animation techniques. The claim uses the limited rules in a process specifically designed to achieve an improved technological result in conventional industry practice. *Alice*, 134 S. Ct. at 2358 (citing *Diehr*, 450 U.S. at 177). Claim 1 of the '576 patent, therefore, is not directed to an abstract idea. Because we find that claim 1 is not directed to ineligible subject matter, we do not reach *Alice* step two. *Enfish*, 822 F.3d at 1339.

V. Conclusion

Claim 1 is not directed to an abstract idea and recitessubject matter as a patentable process under § 101. Accordingly, we *reverse* and hold that claims 1, 7-9, and 13 of the '576 patent and claims 1-4, 6, 9, 13, and 15-17 of the '278 patent are patentable under 35 U.S.C. § 101.

REVERSED AND REMANDED

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[13] This is not a case where the patentee's principal contribution was in discovering relationships that existed in nature, *e.g., Myriad*, 133 S. Ct. at 2112; animators were previously able to naturally depict the relationship between speech, timing, and facial expression.

Chapter 3: Utility

Chap. 3.C. Substantial, Practical, and Specific Utility

On page 241 after note 6, insert the following note:

Note on the Demise of Canada's "Promise" Doctrine in Utility Law

As discussed in note 6 in the casebook, the lower courts in Canada had developed a stringent variant of the utility doctrine—dubbed the "Promise Doctrine"—under which courts invalidated the patents that failed to live up to all the predicted qualities or features disclosed in the patent specification, even if the invention had utility in the conventional sense that it was still good for something (just not as good as promised in the specification). That heightened utility standard was highly controversial and was used in invalidating a number of valuable pharmaceutical patents. Eventually, one pharmaceutical company (Eli Lilly) challenged the Promise Doctrine as being inconsistent with the terms of NAFTA. (As mentioned in the casebook, one of the coauthors of this casebook—Professor Merges—was an expert witness for Eli Lilly in the NAFTA proceeding.)

Two developments in this controversy occurred in the first half of 2017. First, Eli Lilly lost its NAFTA suit against the Government of Canada. In its final opinion, the NAFTA arbitration tribunal ruled that, even if NAFTA would be violated by an "arbitrary" legal doctrine that (i) is "unpredictable and incoherent" (even if not motivated by bad faith); and (ii) has "no legitimate purpose," Eli Lilly failed to demonstrate that Canada's Promise Doctrine met that standard of arbitrariness. *See Eli Lilly and Company v. The Government of Canada*, Final Award (March 16, 2017), at 133 (available at http://icsidfiles.worldbank.org/icsid/ICSIDBLOBS/OnlineAwards/C3544/DC10133_En.pdf. The tribunal found the Promise Doctrine to be "coherent and consistent with the policy justifications stated by [the Canadian Government]" and emphasized that the tribunal's role was not to "question the correctness of the policies or the courts' decisions." *Id.* at 134.

Yet, while Eli Lilly lost the NAFTA battle, it and other pharmaceutical companies won the war. On June 30, the Canadian Supreme Court issued an opinion rejecting the Promise Doctrine. The Court ruled:

> [The Promise Doctrine] is unsound. It is an interpretation of the utility requirement that is incongruent with both the words and the scheme of the Patent Act.
>
> The Promise Doctrine is excessively onerous in two ways: (1) it determines the standard of utility that is required of a patent by reference to the promises expressed in the patent; and (2) where there are multiple expressed promises of utility, it requires that all be fulfilled for a patent to be valid.

AstraZeneca Canada Inc. v. Apotex Inc., 2017 S.C.C. 36 (June 30, 2017) (available at https://scc-csc.lexum.com/scc-csc/scc-csc/en/16713/1/document.do), at 22 ¶¶ 36-37. The Court also articulated the "correct approach" to utility, instructing that the Canadian patent statute "does not prescribe the degree or quantum of usefulness required, or that every potential use be realized — a scintilla of utility will do. A single use related to the nature of the subject-matter is sufficient, and the utility must be established by either demonstration or sound prediction as of the filing date." Id. at 28, ¶ 55.

Chapter 5: Novelty Under the AIA.

Chap. 5.A. Prior Art under AIA § 102(a)

1. One-Time-Period Prior Art in § 102(a)(1).

c. "In Public Use"

On page 361, replace the paragraph directly above the section heading "d. 'On Sale'" with the following paragraph:

> While the validity of the PTO's view on "public use" under the AIA has yet to be decided by the courts, the Federal Circuit in *Helsinn Healthcare S.A. v. Teva Pharms. USA, Inc.*, 855 F.3d 1356 (Fed. Cir. 2017), rejected a broad interpretation of the legislative history that the agency used in justifying its position. *Helsinn* technically involved the scope of the "on sale" language in the AIA, not the "public use" language, and the court expressly stated that it was declining to rule on the scope of "public use" under the AIA. Nevertheless, the *Helsinn* decision is an early indication that judges are likely to be skeptical that Congress intended to make significant shifts in the interpretation of statutory terms of art (such as "public use" or "on sale") where those statutory terms of art are being re-enacted without change. The *Helsinn* opinion is set forth in the supplement to the next section; it should be read only after reading the Supreme Court's opinion in *Pfaff v. Wells*, which is a principal opinion in the casebook.

d. "On Sale"

On page 377, add the following case after note 11:

Helsinn Healthcare S.A. v. Teva Pharms. USA, Inc.

855 F.3d 1356 (Fed. Cir. 2017)

Before DYK, MAYER, and O'MALLEY, Circuit Judges.

DYK, *Circuit Judge*.

Helsinn Healthcare S.A. ("Helsinn") is the owner of the four patents-in-suit directed to intravenous formulations of palonosetron for reducing or reducing the likelihood of chemotherapy-induced nausea and vomiting ("CINV").

Helsinn brought suit against Teva Pharmaceuticals USA, Inc. and Teva Pharmaceutical Industries, Ltd. (collectively, "Teva") alleging … infringement of various claims of those patents. Teva defended, *inter alia*, on the ground that the asserted claims were invalid under the on-sale bar provision of 35 U.S.C. § 102. …

Background

[Helsinn asserted claims from four patents concerning formulations of palonosetron to treat CINV. All four patents traced their priority, at least in part, back to a provisional parent application filed on January 30, 2003. The first three of the four patents were filed prior to the enactment of the AIA and were thus subject to the pre-AIA version of § 102. The fourth patent—U.S. Pat. No. 8,598,219 ("'219 patent")—was filed on May 23, 2013, two months after the AIA's crucial transition date.

If the '219 patent had been a pure continuation application of the original parent application filed on January 30, 2003, it too would have been subject to the pre-AIA version of § 102 because its effective filing date would have been parent's filing date. The '219 patent was, however, a *continuation-in-part application* containing some claims not entitled to the priority date of the original parent application. Under the AIA's transition rule, *all* of the claims in the '219 patent are therefore subject to the AIA version of § 102 because some of them are entitled to priority only after the AIA's transition date. Thus, while the claims asserted by Helsinn are entitled to priority as of the parent application's filing date of January 30, 2003, the asserted claims from the '219 patent are subject to the AIA.]

The use of palonosetron to treat CINV was not new. … The patents-in-suit purport to disclose novel intravenous formulations using unexpectedly low concentrations of palonosetron that were not taught by the prior art. All [claims asserted in the litigation are entitled to] priority to a provisional patent application filed on January 30, 2003. The critical date for the on-sale bar is one year earlier, January 30, 2002. The significance of the critical date is that a sale of the invention before that date can be invalidating.[1]

…

It is undisputed that each asserted claim covers the 0.25 mg dose of palonosetron. In order to simplify the relevant discussion, we refer to the patents as covering the 0.25 mg dose. …

On April 6, 2001, almost two years before applying for a patent, Helsinn and MGI Pharma, Inc. ("MGI"), an oncology-focused pharmaceutical company that markets and distributes in the United States, entered into … a Supply and Purchase Agreement [that was] announced in a joint press release of the two corporations and in MGI's Form 8-K filing with the Securities and Exchange Commission ("SEC"), which included partially-redacted copies of both agreements.

[At the time of the Helsinn-MGI agreement, Helsinn's claimed invention of 0.25mg dose palonosetron was undergoing testing by the Food and Drug Administration ("FDA") to determine whether the new drug formulation was safe for marketing as a medicine.]

All [relevant] information about the transaction was publicly disclosed with two exceptions. The two features of the agreements that were not publicly disclosed were the price terms and the specific dosage formulations covered by the agreements—that is the 0.25 and 0.75 mg doses.

Helsinn admitted at oral argument that the agreement was binding as of its effective date, April 6, 2001, and that it would cover either or both of the 0.25 and 0.75 mg doses, subject to FDA approval. Helsinn also agreed that, if … the products were approved by FDA, then the agreement obligated MGI to purchase and Helsinn to supply the approved doses. But if FDA did not approve either dose, then the agreement likewise would terminate automatically … .

DISCUSSION

Application of the on-sale bar under 35 U.S.C. § 102 is ultimately a question of law that we review de novo. *Robotic Vision Sys., Inc. v. View Eng'g, Inc.*, 249 F.3d 1307, 1310 (Fed. Cir. 2001). The factual findings underlying the district court's conclusion are reviewed for clear error.

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[1] The parties agree that the '219 patent has the same critical date as the pre-AIA patents for the on-sale bar even though it is governed by the AIA. The one-year grace period in the AIA is less protective than under pre AIA § 102(b) for reasons not relevant here. [Eds. note: In this footnote, the court recognizes that, at least for purposes of this litigation, the parties have agreed that any sale by Helsinn counts as prior art only if the sale were prior to January 30, 2002. In effect, the parties' agreement gives Helsinn the full benefit of AIA § 102(b)(1)'s one-year grace period.]

Id. Under *Pfaff*, application of the on-sale bar requires that (1) "the product must be the subject of a commercial offer for sale" and (2) "the invention must be ready for patenting." 525 U.S. at 67.

I

We first address whether the invention … was subject to a sale or offer for sale prior to the critical date. … We agree with the district court that there was a sale for purposes of pre-AIA § 102(b) prior to the critical date because there was a sale of the invention under the law of contracts as generally understood.

Helsinn admits that the Supply and Purchase Agreement was binding as of its effective date, April 6, 2001, and that, if FDA approved the 0.25 mg dose and/or the 0.75 mg dose of palonosetron, the agreement obligated Helsinn to sell and MGI to purchase those products. The Supply and Purchase Agreement bears all the hallmarks of a commercial contract for sale. It obligated MGI to purchase exclusively from Helsinn and obligated Helsinn to supply MGI's requirements of the 0.25 and 0.75 mg doses if approved by FDA. …

There can be no real dispute that an agreement contracting for the sale of the claimed invention contingent on regulatory approval is still a commercial sale as the commercial community would understand that term. The UCC expressly provides that a "purported present sale of future goods . . . operates as a contract to sell." UCC § 2-105(2) (defining "future goods" as "[g]oods which are not both existing and identified"). This is true irrespective of whether those future goods have yet to receive necessary regulatory approval. A contract for sale that includes a condition precedent is a valid and enforceable contract. *See BG Grp., PLC v. Republic of Argentina*, 134 S. Ct. 1198, 1207 (2014). Indeed, conditions precedent such as regulatory approval are a basic feature of contract law. *See, e.g.*, 25 Williston on Contracts § 67:73, at 462 (4th ed. 2013) ("Particular construction or development projects may also require specific governmental or regulatory approvals as conditions precedent to the consummation of the project."); 8 Corbin on Contracts § 31.11, at 99-101 (1999) ("In many contracts it is expressly provided that some act of a third person shall be a condition of a promisor's duty . . . [such as a duty] to buy property contingent on a zoning board's approval . . . ."). …

II

We next address whether the AIA changed the meaning of the on-sale bar under 35 U.S.C. § 102 so that there was no qualifying sale as to the '219 patent. The parties agree that the '219 patent is governed by the AIA.

Before the AIA, § 102(b) barred the patentability of an invention that was "patented or described in a printed publication in this or a foreign country or in public use or *on sale* in this country, more than one year prior to the date of the application for patent." 35 U.S.C. § 102(b) (2006) (emphasis added). Under that earlier provision, we concluded that, although confidentiality weighs against application of the on-sale bar, *see Medicines*, 827 F.3d at 1376, 1377 n.2, that fact alone is not determinative.[7] For instance, in *In re Caveney*, a British company

[7] *See, e.g.*, *Woodland Trust v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998) (stating that "an inventor's own prior commercial use, albeit kept secret, may constitute a public use or sale under § 102(b), barring him from obtaining a patent"); *J.A. LaPorte, Inc. v. Norfolk Dredging Co.*, 787 F.2d 1577, 1581-83 (Fed. Cir. 1986) (stating that the on-sale bar "is not limited to sales by the inventor or one under his control, but may result from activities of a third party" and rejecting the argument that "secret commercialization by a third party" is not invalidating since "the invention . . . was discoverable from the device which was sold" and the "device . . . embodie[d] the invention" (emphasis omitted)); *In re Caveney*, 761 F.2d 671, 675 (Fed. Cir. 1985) (rejecting the argument that a secret sale by a third party was not

offered to sell the claimed invention to an American company that would be its exclusive seller in the United States before the critical date. *In re Caveney*, 761 F.2d 671, 673-74 (Fed. Cir. 1985). The court rejected the argument that a sale or offer for sale did not trigger the on-sale bar when it had been "kept secret from the trade," concluding that "sales or offers by one person of a claimed invention . . . bar another party from obtaining a patent if the sale or offer to sell is made over a year before the latter's filing date." *Id.* at 675.

By enacting the AIA, Congress amended § 102 to bar the patentability of an "invention [that] was patented, described in a printed publication, or in public use, *on sale*, or otherwise available to the public before the effective filing date of the claimed invention." 35 U.S.C. § 102(a)(1) (emphasis added).

Teva and various amici assert that by reenacting the existing statutory term, "on sale," Congress did not change the meaning of the on-sale bar or disturb settled law. Helsinn, the government, and other amici argue that the AIA changed the law by adding the "otherwise available to the public" phrase. They argue that the on-sale bar now does not encompass secret sales and requires that a sale make the invention available to the public in order to trigger application of the on-sale bar. Apart from the additional statutory language, this argument primarily relies on floor statements made by individual members of Congress. While recognizing that such floor statements are typically not reliable as indicators of congressional intent, *see, e.g.*, *Exxon Mobil Corp. v. Allapattah Servs., Inc.*, 545 U.S. 546, 568 (2005), they argue that here we should look to the floor statements to determine the meaning of the provision. These floor statements include material such as the following:

> [S]ubsection 102(a) was drafted in part to do away with precedent under current law that *private offers for sale* or private uses or secret processes practiced in the United States that result in a product or service that is then made public may be deemed patent-defeating prior art. That will no longer be the case.

157 Cong. Rec. 3415 (2011) (remarks of Sen. Leahy) (emphasis added).

> [T]he current on-sale bar imposes penalties not demanded by any legitimate public interest. There is no reason to fear 'commercialization' that merely consists of a *secret sale or offer for sale* but that does not operate to disclose the invention to the public. . . . The present bill's new section 102(a) precludes extreme results such as these . . . .

157 Cong. Rec. 3424 (2011) (remarks of Sen. Kyl) (emphasis added).[8]

We decline the invitation by the parties to decide this case more broadly than necessary. At most the floor statements show an intent "to do away with precedent under current [§ 102] law," 157 Cong. Rec. 3415 (2011) (remarks of Sen. Leahy). Such precedent had held certain

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invalidating because "sales or offers by one person of a claimed invention will bar another party from obtaining a patent"); *see also* 2 R. Carl Moy, Moy's Walker on Patents § 8:228 (4th ed. 2016) ("[E]ven a private sale or offer for sale can be a barring event."); 3 John Gladstone Mills III et al., Pat. L. Fundamentals § 10:12 (2d ed. 2017) ("An invention is 'on sale' even though the only sale was a 'private' one.").

[8] *See also* 157 Cong. Rec. 3423 (2011) (remarks of Sen. Kyl) ("The word 'otherwise' makes clear that the preceding clauses describe things that are of the same quality or nature . . . . As the committee report notes at page 9, 'the phrase "available to the public" is added to clarify the broad scope of relevant prior art, as well as to emphasize the fact that it . . . must be publicly availa-ble.'"); 157 Cong. Rec. 9782 (2011) (remarks of Sen. Smith) ("[C]ontrary to current precedent, in order to trigger the bar in the new 102(a) in our legislation, an action must make the patented subject matter 'available to the public' before the effective filing date.").

secret uses to be invalidating under the "public use" prong of § 102(b). Senator Kyl explicitly referenced cases such as *Egbert v. Lippmann*, 104 U.S. 333 (1881), *Beachcombers International, Inc. v. Wildewood Creative Products, Inc.*, 31 F.3d 1154 (Fed. Cir. 1994), and *JumpSport, Inc. v. Jumpking, Inc.*, 191 Fed. Appx. 926, 2006 WL 2034498 (Fed. Cir. 2006), and stated that "new section 102(a) precludes extreme results such as these." 157 Cong. Rec. 3424 (2011) (remarks of Sen. Kyl). Each of those cases involved a public use where the invention was not, as a result of the use, disclosed to the public. This public use issue is not before us, and we decline to address it.

The floor statements do not identify any *sale* cases that would be overturned by the amendments. Even if the floor statements were intended to overrule those secret or confidential sale cases discussed above and cited in footnote 7, that would have no effect here since those cases were concerned entirely with whether the existence of a sale or offer was public. Here, the existence of the sale— *i.e.*, the Supply and Purchase Agreement between Helsinn and MGI—was publicly announced in MGI's [SEC filings.] The [SEC filings] also included a copy of the contract for sale as an attachment, albeit partially redacted. Detailed information about palonosetron, its benefits and uses in treating CINV were also disclosed. The statements disclosed the chemical structure of palonosetron and specified that the covered products were "pharmaceutical preparations for human use in [intravenous] dosage form, containing [palonosetron] as an active ingredient." Supply and Purchase Agreement, *supra*, art. 1.9. And, as described above, the agreements disclosed all the pertinent details of the transaction other than the price and dosage levels.

Helsinn argues that the AIA did more than overrule the "secret sale" cases, and relies on the "otherwise available to the public" language in the statute and the floor statements. Helsinn argues that those statements suggest that the on-sale bar does not apply unless the sale "disclose[s] the invention to the public" before the critical date. 157 Cong. Rec. 3424 (2011) (remarks of Sen. Kyl). It urges that since the 0.25 mg dose was not disclosed, the invention was not disclosed and the on-sale bar does not apply. The suggestion is that Congress required that the details of the claimed invention be publicly disclosed before the on-sale bar is triggered.

Requiring such disclosure as a condition of the on-sale bar would work a foundational change in the theory of the statutory on-sale bar. Indeed, the seminal Supreme Court decision in *Pennock* addressed exactly such a situation[10]— the public sale of an item but the withholding from "the public the secrets of [the] invention." *Pennock v. Dialogue*, 27 U.S. 1 (1829). Failing to find such a sale invalidating, said the Court, "would materially retard the progress of science and the useful arts, and give a premium to those who should be least prompt to communicate their discoveries." *Id.*

So too under our cases, an invention is made available to the public when there is a commercial offer or contract to sell a product embodying the invention and that sale is made public. Our cases explicitly rejected a requirement that the details of the invention be disclosed in the terms of sale. *See RCA Corp. v. Data Gen. Corp.*, 887 F.2d 1056, 1060 (Fed. Cir. 1989),

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[10] *Pennock v. Dialogue*, 27 U.S. 1, 19 (1829) ("If an inventor should be permitted to hold back from the knowledge of the public the secrets of his invention; if he should for a long period of years retain the monopoly, and make, and sell his invention publicly, and thus gather the whole profits of it, relying upon his superior skill and knowledge of the structure; and then, and then only, when the danger of competition should force him to secure the exclusive right, he should be allowed to take out a patent, and thus exclude the public from any farther use than what should be derived under it during his fourteen years; it would materially retard the progress of science and the useful arts, and give a premium to those who should be least prompt to communicate their discoveries.").

overruled in part on other grounds by Grp. One, 254 F.3d at 1048 (rejecting the argument "that the bid documents themselves must disclose the invention with respect to all claim elements" since that is "clearly not legally correct" and there can be "a definite offer for sale or a sale of a claimed invention even though *no* details are disclosed").

A primary rationale of the on-sale bar is that publicly offering a product for sale that embodies the claimed invention places it in the public domain, regardless of when or whether actual delivery occurs.[11] The patented product need not be on-hand or even delivered prior to the critical date to trigger the on-sale bar.[12] And, as previously noted, we have never required that a sale be consummated or an offer accepted for the invention to be in the public domain and the on-sale bar to apply, nor have we distinguished sales from mere offers for sale.[13] We have also not required that members of the public be aware that the product sold actually embodies the claimed invention. For instance, in *Abbott Laboratories v. Geneva Pharmaceuticals, Inc.*, 182 F.3d 1315 (Fed. Cir. 1999), at the time of the sale, neither party to the transaction knew whether the product sold embodied the claimed invention and had no easy way to determine what the product was. *Id.* at 1317-18.

Thus, our prior cases have applied the on-sale bar even when there is no delivery, when delivery is set after the critical date, or, even when, upon delivery, members of the public could not ascertain the claimed invention. There is no indication in the floor statements that these

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[11] *See, e.g.*, *Pfaff*, 525 U.S. at 64 ("§ 102 of the Patent Act serves as a limiting provision, both excluding ideas that are in the public domain from patent protection and confining the duration of the monopoly to the statutory term. . . . A similar reluctance to allow an inventor to remove existing knowledge from public use undergirds the on-sale bar."); *Merck & Cie*, 822 F.3d at 1355 n.4 ("One of the primary purposes of the on-sale bar is to prohibit the withdrawal of inventions that have been placed into the public domain through commercialization." (internal quotation marks omitted) (quoting *Abbott Lab. v. Geneva Pharms., Inc.*, 182 F.3d 1315, 1319 (Fed. Cir. 1999))); *J.A. LaPorte*, 787 F.2d at 1583 ("The date of the purchase agreement is, therefore, the effective date on which the invention became part of the public domain. That delivery of the device embodying the invention occurred later is immaterial.").

[12] *See, e.g.*, *Pfaff*, 525 U.S. at 58, 67 (applying the on-sale bar where the sale order was not filled until after the critical date); *STX, LLC v. Brine, Inc.*, 211 F.3d 588, 590 (Fed. Cir. 2000) (same); *Buildex Inc. v. Kason Indus., Inc.*, 849 F.2d 1461, 1464 (Fed. Cir. 1988) ("Proof of delivery before the critical date would have been conclusive in this case, but it is not necessary to holding that the device was on sale before then."); *Robbins Co. v. Lawrence Mfg. Co.*, 482 F.2d 426, 431 (9th Cir. 1973) ("A simple placing on sale is sufficient to establish the 'on sale' defense—even an executory contract under which the patented matter is delivered after the critical date.").

[13] *See, e.g.*, *Pfaff*, 525 U.S. at 67 ("[A]cceptance of the purchase order prior to April 8, 1981, makes it clear that . . . an offer had been made."); *Merck & Cie*, 822 F.3d at 1352 ("An offer to sell is sufficient to raise the on-sale bar, regardless of whether that sale is ever consummated."); *Hamilton Beach Brands, Inc. v. Sunbeam Prods., Inc.*, 726 F.3d 1370, 1374, 1377 (Fed. Cir. 2013) ("An actual sale is not required for the activity to be an invalidating commercial offer for sale."); *Cargill*, 476 F.3d at 1370 ("There is no requirement that the sale be completed."); *Scaltech, Inc. v. Retec/Tetra, LLC*, 269 F.3d 1321, 1328 (Fed. Cir. 2001) ("An offer for sale does not have to be accepted to implicate the on sale bar."); *A.B. Chance Co. v. RTE Corp.*, 854 F.2d 1307, 1311 (Fed. Cir. 1988) ("A single offer to sell is enough to bar patentability whether or not the offer is accepted."); *Buildex*, 849 F.2d at 1464 ("It is not necessary that a sale be consummated for the bar to operate."); *In re Theis*, 610 F.2d 786, 791 (CCPA 1979) ("For § 102(b) to apply, it is not necessary that a sale be consummated."); *Mfg. Research Corp. v. Graybar Elec. Co.*, 679 F.2d 1355, 1362 (11th Cir. 1982) ("The statutory on sale bar applies when the invention that is the subject of a patent application is merely offered for sale; there is no requirement that a sale be consummated before the statutory bar attaches.").

members intended to overrule these cases. In stating that the invention must be available to the public they evidently meant that the public sale itself would put the patented product in the hands of the public. Senator Kyl himself seems to have agreed with this proposition, stating explicitly that "once a product is sold on the market, any invention that is inherent to the product becomes publicly available prior art and cannot be patented." 157 Cong. Rec. 3423 (2011) (remarks of Sen. Kyl).[14]

There are no floor statements suggesting that the sale or offer documents must themselves publicly disclose the details of the claimed invention before the critical date. If Congress intended to work such a sweeping change to our on-sale bar jurisprudence and "wished to repeal . . . [these prior] cases legislatively, it would do so by clear language." *Dir., OWCP v. Perini N. River Assocs.*, 459 U.S. 297, 321 (1983).

We conclude that, after the AIA, if the existence of the sale is public, the details of the invention need not be publicly disclosed in the terms of sale. For the reasons already stated, the Supply and Purchase Agreement between Helsinn and MGI constituted a sale of the claimed invention—the 0.25 mg dose—before the critical date, and therefore both the pre-AIA and AIA on-sale bars apply. We do not find that distribution agreements will always be invalidating under § 102. We simply find that this particular Supply and Purchase Agreement is.

III

We finally address whether the invention was ready for patenting as of the critical date of January 30, 2002. Under *Pfaff*, there are at least two ways in which an invention can be shown to be ready for patenting: "by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention." *Pfaff*, 525 U.S. at 67-68. We conclude that the invention here was ready for patenting because it was reduced to practice before the critical date …. [The court ruled that the invention had been reduced to practice because actual embodiments of the invention had been produced and the inventor had determined that the invention would work for its intended purpose. The district court had erred, the Federal Circuit ruled, by demanding proof that, prior to the critical date, the invention needed to have satisfied the FDA standards for drug approval.]

Conclusion

We hold that the asserted claims … are invalid under the on-sale bar.

REVERSED

NOTES ON *HELSINN*

1. A Narrow Decision … with Some Hints. The panel in *Helsinn* scrupulously avoids any broad decision and, specifically, avoids commenting on whether the AIA changed the pre-AIA interpretation of "public use" articulated in the *Metallizing Engineering* case. Nevertheless, the court drops two big hints in its citation of Supreme Court precedent (i) that generally discounts the reliability of legislative floor statements; and (ii) that seeks "clear language" to demonstrate any sweeping change to preexisting legal norms.

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[14] Senator Kyl quoted our anticipation decision in *Rosco, Inc. v. Mirror Lite Co.*, 304 F.3d 1373 (Fed. Cir. 2002). "Under the doctrine of inherency, if an element is not expressly disclosed in a prior art reference, the reference will still be deemed to anticipate a subsequent claim if the missing element is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." 157 Cong. Rec. 3423 (2011) (remarks of Sen. Kyl) (internal quotation marks omitted) (quoting *Rosco*, 304 F.3d at 1380).

Despite those hints, the scope of the AIA's prior art categories remains the subject of controversy, and a petition for en banc rehearing of the panel decision in *Helsinn* is currently pending at the Federal Circuit.

2. Contingent Sales. *Helsinn* also shows an important point about the "on sale" category of prior art: Sales contingent on future events *do* qualify as prior art, provided that the contract is binding on the party making the sale. That result makes good sense given the blackletter law that a mere "offer" to sell (which is contingent upon the future acceptance of a buyer) is sufficient to place an invention "on sale."

e. "Otherwise Available to the Public"

On page 377-78, delete the first two paragraphs of section "e" and replace with this single paragraph:

> *Helsinn* is the first appellate opinion on whether the "otherwise available to the public" language constricts the other prior art categories in § 102(a)(1). Because *Helsinn* is narrowly written, the general controversy on that issue is likely to continue for some time. But aside from that controversy, § 102(a)(1) also plainly establishes a new category of prior art distinct from the other prior art categories. What might fall into this new category and not into any of the others?

Chapter 7: Nonobviousness

Chap. 7.C.2. Obviousness at the Federal Circuit After *KSR*

On page 600, add the following note:

7. *Samsung v. Apple*—Another Supreme Court Case on Obviousness? On June 26, 2017, the Supreme Court called for the views of the Solicitor General (CVSG) concerning whether certiorari should be granted in *Samsung Electronics, Co. v. Apple Inc.* (No. 16-1102). *See* 137 S. Ct. 2320 (2017). Because a CVSG order is often a step toward the grant of certiorari (as it was in *KSR*), the Supreme Court's action makes the case worth watching. (Full disclosure: One of the coauthors of this casebook—Professor Duffy—has filed an amicus brief on behalf of two organizations that support granting certiorari in the case.)

The case arises from the Federal Circuit's first post-*KSR en banc* decision concerning obviousness, and the first question presented in Samsung's petition for certiorari essentially challenges the general state of the Federal Circuit's post-*KSR* law on obviousness. Significantly, the petition argues that, by "treating every consideration affecting obviousness as a factual one," the Federal Circuit has effectively transformed "the supposedly legal question of obviousness [into a question] of fact." Petition for a Writ of Certiorari at 23 (available at http://www.scotusblog.com/wp-content/uploads/2017/04/16-1102-cert-petition.pdf). The law/fact distinction is important for many reasons, including that a party challenging a patent in infringement litigation must overcome a "clear and convincing" standard of proof on all factual issues, but not on legal issues.

The underlying *en banc* decision of the Federal Circuit (*Apple Inc. v. Samsung Elecs. Co., Ltd.*, 839 F.3d 1034 (Fed. Cir. 2016) (en banc)) decides several important points of law on obviousness, but those points cannot be viewed as finally resolved given that much of the reasoning in the majority opinion is being challenged in Samsung's petition for certiorari. The *en banc* decision also drew strong dissents from Chief Judge Prost and Judges Dyk and Reyna. Judge Dyk's dissent, in particular, was sharply worded and accused the majority of "lower[ing] the bar for nonobviousness" in a way that is "contrary to *KSR*." 839 F.3d at 1076-77.

All of the briefs filed in the case so far are available here: http://www.scotusblog.com/case-files/cases/samsung-electronics-co-ltd-v-apple-inc/. The Solicitor General will likely file an amicus brief in response to the Court's invitation sometime in late 2017 or early 2018.

Chapter 8: Infringement

Chap. 8.H. Infringement and Foreign Activity.

On page 790, add the following note:

6. § 271(f) and Single Components. In early 2017, the Supreme Court decided another case on § 271(f), *Life Technologies Corp. v. Promega Corp.*, 137 S. Ct. 734 (2017). The case presented the narrow issue whether the statutory phrase "all or a substantial portion of the components of a patented invention" in § 271(f)(1)) can refer to a *single* component of a multicomponent invention. Not surprisingly, the Court unanimously answered that question "no."

The Court had two good reasons for reaching that result. First, the Court looked to the text of § 271(f)(1):

> [Section 271(f)(1)] is targeted toward the supply of all or a substantial portion "of the components," where "such components" are uncombined, in a manner that actively induces the combination of "such components" outside the United States. Text specifying a substantial portion of "components," plural, indicates that multiple components constitute the substantial portion.

137 S.Ct. at 741. Second, the Court considered the relationship between paragraphs (1) and (2) of § 271(f):

> Reading §271(f)(1) to refer to more than one component allows the two provisions to work in tandem. Whereas §271(f)(1) refers to "components," plural, §271(f)(2) refers to "any component," singular. And, whereas §271(f)(1) speaks to whether the components supplied by a party constitute a substantial portion of the components, §271(f)(2) speaks to whether a party has supplied "any" noncommodity component "especially made or especially adapted for use in the invention."

137 S.Ct. at 741-42. Thus, the Court's reading makes sense of the statute's structure.

The Court's ruling—that a single component never qualifies as a "substantial portion" of the components under paragraph (1) of § 271(f)—also tends to curb the extraterritorial effects of Section 271(f), and that result is sensible given that the baseline rule of U.S. patent law is still a principle of territoriality. Section 271(f) is an exception, and the courts usually balk at endorsing broad readings of statutes that create exceptions to fundamental principles that have long governed a field of law. Of course, supplying a single component could still generate liability under § 271(f)(2), but that provision requires that the component (i) is not a "commodity of commerce" and (ii) "is especially made or especially adapted for use in the invention"—requirements that tend to limit the scope of exporters' responsibility for extraterritorial infringement.

Chapter 9: Remedies

Chap. 9.C. Lost Profits.

Insert on page 877 the following new section before subchapter D:

4. Obtaining the Infringer's Profits under Design Patent Law

While most of this subchapter has addressed the lost profits remedy available under § 284 for infringement of a *utility* patent, § 289 of the Patent Act grants a special remedy for infringement of a *design* patent:

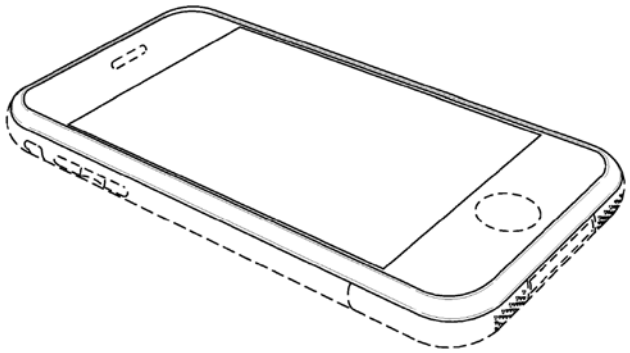
> Whoever during the term of a patent for a design, without license of the owner, (1) applies the patented design, or any colorable imitation thereof, to any article of manufacture for the purpose of sale, or (2) sells or exposes for sale any article of manufacture to which such design or colorable imitation has been applied shall be liable to the owner to the extent of his total profit, but not less than $250, recoverable in any United States district court having jurisdiction of the parties.
>
> Nothing in this section shall prevent, lessen, or impeach any other remedy which an owner of an infringed patent has under the provisions of this title, but he shall not twice recover the profit made from the infringement.

The remedy granted under that section is what's known as a *disgorgement* remedy: It requires the *infringer* to disgorge *its* "total profit" to the design patent holder. The focus of the remedy is what *the infringer made in its profits* rather than what *the patentee lost in its profits* due to the infringement. Thus, the remedy applies even if the patentee cannot prove any damages to its business. For example, a design patentee incapable of producing even one more article of manufacture and thus incapable of proving any lost profits due to infringement would still be entitled by the statute to recover the "total profit" made by the infringer.

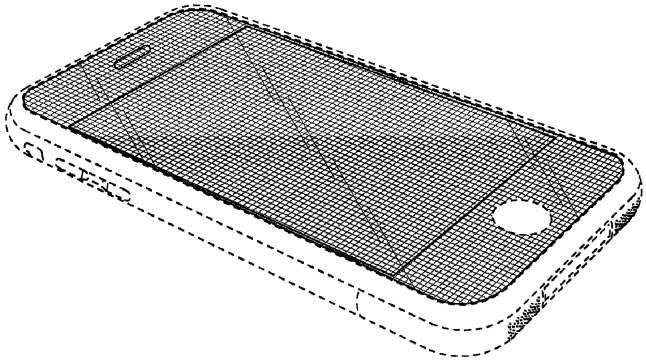
A crucial question, however, is: total profit on what? The statute cannot mean that an infringer's full corporate profits are subject to disgorgement even if the corporation infringed merely one design patent on only one of many products sold by the corporation.

The statutory structure suggests that the "total profit" refers to the profits on the "article of manufacture" to which the design was applied. That interpretive step still leaves another issue: which article of manufacture? For example, if a design patent covers the exterior shape of a car, should the infringer be forced to disgorge all profits earned on the car or only the portion of the profits attributable to the body of the car?

This issue became important in patent infringement litigation brought by Apple against Samsung. Apple's iPhone was covered by several design patents including, for example, U.S. Patent No. D593,087 (May 26, 2009), which covers the bezel of the iPhone (the rim surrounding the glass face). The solid lines in the following drawing illustrate the patented design (design patents are claimed via drawings with a convention that only the solid lines—not the broken lines—claim the design):



Two other design patents covered the dark glass face of the original iPhone (D618,677), and the appearance of icons on the phone's screen (D604,305):



Some of Samsung's smartphones were found to infringe each of these three design patents. As a remedy for that infringement, Apple elected to seek Samsung's "total profits" under § 289, and both the district court and the Federal Circuit held that Apple was entitled to the

entirety of Samsung profits on the infringing smartphones—a total of § 399 million. The Supreme Court unanimously reversed:

Samsung Electronics Co. v. Apple Inc.
137 S. Ct. 429 (2016)

Justice SOTOMAYOR delivered the opinion of the Court.

…

II

Section 289 allows a patent holder to recover the total profit an infringer makes from the infringement. It does so by first prohibiting the unlicensed "appli[cation]" of a "patented design, or any colorable imitation thereof, to any article of manufacture for the purpose of sale" or the unlicensed sale or exposure to sale of "any article of manufacture to which [a patented] design or colorable imitation has been applied." 35 U. S. C. § 289. It then makes a person who violates that prohibition "liable to the owner to the extent of his total profit, but not less than $250." *Ibid.* "Total," of course, means all. See American Heritage Dictionary 1836 (5th ed. 2011) ("[t]he whole amount of something; the entirety"). The "total profit" for which § 289 makes an infringer liable is thus all of the profit made from the prohibited conduct, that is, from the manufacture or sale of the "article of manufacture to which [the patented] design or colorable imitation has been applied."

Arriving at a damages award under § 289 thus involves two steps. First, identify the "article of manufacture" to which the infringed design has been applied. Second, calculate the infringer's total profit made on that article of manufacture.

This case requires us to address a threshold matter: the scope of the term "article of manufacture." The only question we resolve today is whether, in the case of a multicomponent product, the relevant "article of manufacture" must always be the end product sold to the consumer or whether it can also be a component of that product. Under the former interpretation, a patent holder will always be entitled to the infringer's total profit from the end product. Under the latter interpretation, a patent holder will sometimes be entitled to the infringer's total profit from a component of the end product.

A

The text resolves this case. The term "article of manufacture," as used in § 289, encompasses both a product sold to a consumer and a component of that product.

"Article of manufacture" has a broad meaning. An "article" is just "a particular thing." J. Stormonth, A Dictionary of the English Language 53 (1885) (Stormonth); see also American Heritage Dictionary, at 101 ("[a]n individual thing or element of a class; a particular object or item"). And "manufacture" means "the conversion of raw materials by the hand, or by machinery, into articles suitable for the use of man" and "the articles so made." Stormonth 589; see also American Heritage Dictionary, at 1070 ("[t]he act, craft, or process of manufacturing products, especially on a large scale" or "[a] product that is manufactured"). An article of manufacture, then, is simply a thing made by hand or machine.

So understood, the term "article of manufacture" is broad enough to encompass both a product sold to a consumer as well as a component of that product. A component of a product, no

less than the product itself, is a thing made by hand or machine. That a component may be integrated into a larger product, in other words, does not put it outside the category of articles of manufacture.

This reading of article of manufacture in § 289 is consistent with 35 U. S. C. §171(a), which makes "new, original and ornamental design[s] for an article of manufacture" eligible for design patent protection. The Patent Office and the courts have understood §171 to permit a design patent for a design extending to only a component of a multicomponent product. See, *e.g.*, *Ex parte Adams*, 84 Off. Gaz. Pat. Office 310, 311 (1898) ("The several articles of manufacture of peculiar shape which when combined produce a machine or structure having movable parts may each separately be patented as a design . . . "); *Application of Zahn*, 617 F. 2d 261, 268 (CCPA 1980) ("Section 171 authorizes patents on ornamental designs for articles of manufacture. While the design must be *embodied* in some articles, the statute is not limited to designs for complete articles, or 'discrete' articles, and certainly not to articles separately sold . . . ").

This reading is also consistent with 35 U. S. C. § 101, which makes "any new and useful . . . manufacture . . . or any new and useful improvement thereof" eligible for utility patent protection. Cf. 8 D. Chisum, Patents § 23.03[2], pp. 23-12 to 23-13 (2014) (noting that "article of manufacture" in § 171 includes "what would be considered a 'manufacture' within the meaning of Section 101"). "[T]his Court has read the term 'manufacture' in §101 . . . to mean 'the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery.'" *Diamond* v. *Chakrabarty*, 447 U. S. 303, 308 (1980) (quoting *American Fruit Growers, Inc.* v. *Brogdex Co.*, 283 U. S. 1, 11 (1931)). The broad term includes "the parts of a machine considered separately from the machine itself." 1 W. Robinson, The Law of Patents for Useful Inventions § 183, p. 270 (1890).

B

The Federal Circuit's narrower reading of "article of manufacture" cannot be squared with the text of § 289. The Federal Circuit found that components of the infringing smartphones could not be the relevant article of manufacture because consumers could not purchase those components separately from the smartphones. See 786 F. 3d, at 1002 (declining to limit a § 289 award to a component of the smartphone because "[t]he innards of Samsung's smartphones were not sold separately from their shells as distinct articles of manufacture to ordinary purchasers"); see also *Nordock, Inc.* v. *Systems Inc.*, 803 F. 3d 1344, 1355 (CA Fed. 2015) (declining to limit a § 289 award to a design for a "'lip and hinge plate'" because it was "welded together" with a leveler and "there was no evidence" it was sold "separate[ly] from the leveler as a complete unit"). But, for the reasons given above, the term "article of manufacture" is broad enough to embrace both a product sold to a consumer and a component of that product, whether sold separately or not. Thus, reading "article of manufacture" in § 289 to cover only an end product sold to a consumer gives too narrow a meaning to the phrase.

The parties ask us to go further and resolve whether, for each of the design patents at issue here, the relevant article of manufacture is the smartphone, or a particular smartphone component. Doing so would require us to set out a test for identifying the relevant article of manufacture at the first step of the § 289 damages inquiry and to parse the record to apply that test in this case. The United States as *amicus curiae* suggested a test, see Brief for United States as *Amicus Curiae* 27-29, but Samsung and Apple did not brief the issue. We decline to lay out a test for the first step of the § 289 damages inquiry in the absence of adequate briefing by the

parties. Doing so is not necessary to resolve the question presented in this case, and the Federal Circuit may address any remaining issues on remand.

III

The judgment of the United States Court of Appeals for the Federal Circuit is therefore reversed, and the case is remanded for further proceedings consistent with this opinion.

It is so ordered.

NOTES ON *SAMSUNG v. APPLE*

1. Damages for Infringements in Multicomponent Devices. Though the Supreme Court decides this case as a narrow matter of interpreting rather specific statutory text, the Court frames the case in a very particular way—stating the issue in the case is "whether, in the case of a multicomponent product, the relevant 'article of manufacture' must always be the end product sold to the consumer or whether it can also be a component of that product." That framing helps to explain the greater significance of this case, for it is another situation in which the courts have been confronted with patent infringement of a few particular patents within the context of a much larger multicomponent device.

One great achievement of modern technology industries is the ability to combine numerous advances into a single highly functional product. For example, a smartphone encompasses a large number of creative contributions in electronics, communications protocols, batteries, cameras, software and design. The end product is enormously useful, but the combination of creative efforts makes calculating patent damages enormously difficult. The goal is to provide reasonable remedies (to maintain incentives for innovation) but to avoid overcompensation (so as not to foster litigation).

2. What's Next? The *Samsung* Court rejected the Federal Circuit's approach—which required the "article of manufacture" to be something that was sold separately to consumers—but the Court did not decide the correct method for assessing the infringer's profits. What is the best way to do so? Note that the Federal Circuit's approach, whatever its flaws, was easy to administer because businesses typically do have some idea of how much profit is made on each product they sell.

The Supreme Court's approach will lead to some difficult decisions. For example, how much of Samsung's profits should be attributable to the bezel or the arrangement of the icons of the smartphone (which appear only when the phone is in use and then only when the phone is showing a "home screen")? Should it be a percentage of how much it cost to make that part of the phone? Should consumers be surveyed (e.g., by asking "how much more do you value your phone because the icons on the home screen are squares not circles")? The Supreme Court leaves all such questions for the lower courts on remand.

Chapter 10: The Legal Process of the Patent System

Chap. 10.A.5. The Jurisdictional Structure of the Federal Courts.

On page 923, after the note on the Federal Circuit and the Supreme Court, add the following note:

Note on Venue in Patent Infringement Cases

1. Federal Circuit vs. Supreme Court Precedent on Patent Venue. While the prior note provides some background and academic commentary about the relationship between the Federal Circuit and the Supreme Court, this note provides a real-world example of the degree to which diverging views between the two courts can dramatically affect the legal process of the patent system.

In patent infringement cases, "venue"—the procedural rules governing in which federal district courts a plaintiff may properly file suit—has long been a subject of controversy. In 1897, the Congress passed a special statute, only two sentences long, that governed venue in patent infringement cases and, in the statute's second sentence, authorized federal service of process in patent cases. The venue sentence, now separately codified, is at 28 U.S.C. § 1400(b) and reads:

> Any civil action for patent infringement may be brought in the judicial district [i] where the defendant resides, or [ii] where the defendant has committed acts of infringement and has a regular and established place of business.

As the language of that statute makes clear, patent infringement actions may properly be brought in only two types of districts: [i] the district where the defendant's resides; and [ii] districts where the defendant has a "regular and established place of business" and has committed acts of infringement.

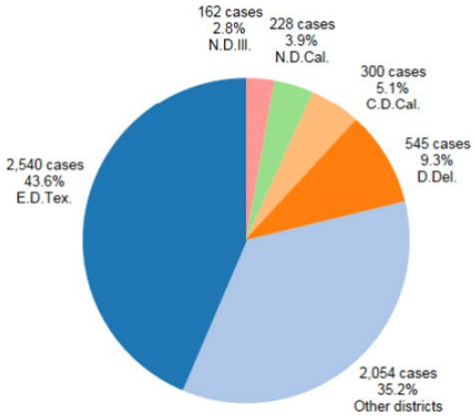
In 1942 and again in 1957, the Supreme Court held that the patent venue statute was the sole statute governing venue in patent infringement cases and that the statute should not be supplemented by provisions in general venue statutes. *See Stonite Products Co. v. Melvin Lloyd Co.*, 315 U.S. 561, 566 (1942) (holding that the patent venue statute "was intended to define the exact limits of venue in patent infringement suits" and that "Congress did not intend the [patent venue statute] to dovetail with the general provisions relating to the venue of civil suits, but rather that it alone should control venue in patent infringement proceedings"); *Fourco Glass Co. v. Transmirra Products Corp.*, 353 U.S. 222, 229 (1957) (holding that the patent venue statute "is the sole and exclusive provision controlling venue in patent infringement actions" and that "it is not to be supplemented by the provisions of" the general venue statute).

In 1990, after Congress enacted a slight wording change to the general venue statute, the Federal Circuit held that the patent venue statute now *could be supplemented* by the provisions of the general venue statute. *See VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574 (Fed. Cir. 1990). Specifically, the *VE Holding* court held that the concept of "where the defendant resides" in the patent venue statute could be supplemented by the definition of residence in the general venue statute, which provided that a corporate defendant "shall be deemed to reside in any judicial district in which it is subject to personal jurisdiction at the time the action is commenced." 28 U.S.C. § 1391(c) (1990). That result was particularly surprising because the issue in *VE Holding*—whether the corporate residence definition in § 1391(c) should define

residence in the patent venue statute (§ 1400(b))—was the exact same issue that the Supreme Court had decided the opposite way in its 1957 *Fourco* decision.

The Federal Circuit's holding in *VE Holding* effectively destroyed the defense of venue for all corporate defendants in patent infringement suits and rendered the patent venue statute a dead letter in almost all cases. Plaintiffs in patent infringement suits were free to sue corporate defendants in any district having personal jurisdiction, and that rule meant suit could usually be brought in almost every judicial district.

The Federal Circuit's *VE Holding* precedent soon led to a great deal of forum shopping by plaintiffs. Eventually, a few districts—most notably the Eastern District of Texas—became favorities for plaintiffs to bring their suits. By 2006, the Eastern District of Texas had captured about 9% of all patent infringement cases (even though it is only one of 94 federal judicial districts), and the *New York Times* ran a story entitled "So Small a Town, So Many Patent Suits" (available at http://www.nytimes.com/2006/09/24/business/24ward.html) that documented the extraordinary rise in patent filings in the district. By 2015, that district's share of patent litigation swelled to over 43% of all patent infringement cases in the country:



See Brian Howard, Lex Machina 2015 End-of-Year Trends Fig.3 (Jan. 7, 2016), available at http://www.lexmachina.com/lex-machina-2015-en.

In 2016, a party argued to the Federal Circuit that Supreme Court precedent should control the interpretation of the patent venue statute, but the court found the argument "to be utterly without merit or logic." *In re TC Heartland LLC*, 821 F.3d 1338, 1342 (Fed. Cir. 2016). The Supreme Court granted certiorari and unanimously reversed. *TC Heartland LLC v. Kraft Food Brands LLC*, 137 S. Ct. 1514 (2017). (Full disclosure: One coauthor of this casebook—Professor Duffy—served as counsel to TC Heartland, the losing party in the Federal Circuit and the prevailing party in the Supreme Court.)

Because of its prior precedents interpreting the patent venue statute, the Supreme Court viewed the case as turning on "whether Congress changed the meaning of [patent venue statute] when it amended [the general venue statute]." 137 S.Ct. at 1520. The Court reasoned that "[w]hen Congress intends to effect a change of that kind, it ordinarily provides a relatively clear indication of its intent in the text of the amended provision." *Id.* The Court concluded that "[t]he current version of § 1391 [the general venue statute] does not contain any indication that Congress intended to alter the meaning of § 1400(b) [the patent venue statute] as interpreted in *Fourco*." *Id.*

In sum, the Supreme Court seemed to see the issue as clear cut, even though the Federal Circuit had seen the issue as clear cut in the other direction for over a quarter century. Cases like *TC Heartland* will likely provide more fuel to the academic debate over the relationship between the Federal Circuit and the Supreme Court.

2. Practical Consequences and Open Questions. In addition to its academic significance, *TC Heartland* also has enormous practical consequences for litigators across the country, who now must pay attention to the patent venue statute that was viewed as a dead letter for more than two decades. Several important practical questions have arisen, including:

a. Did *TC Heartland* change the law? An objection to improper venue has to be raised at a very early stage in litigation or else the objection is waived. Because the patent venue statute had been interpreted so broadly under Federal Circuit precedent, many attorneys for defendants did not raise timely objections even though venue was improper under the older Supreme Court precedents. Lower court precedent on procedural default sometimes excuses a failure to make a timely objection if there is a change in the law. Thus, many attorneys who failed to make a proper objection to venue are now litigating whether *TC Heartland* changed the law.

As a practical matter, the answer to this question may seem obvious: Of course, the Supreme Court's decision changed the practice of patent venue law in a major way. On the other hand, the whole theory of the Supreme Court's opinion is that the Court's 1957 *Fourco* decision had always binding and that the Federal Circuit had just "been ignoring [the Court's] decision." Transcript of Oral Argument at 11 (statement of Justice Kagan) (https://www.supremecourt.gov/oral_arguments/argument_transcripts/2016/16-341_8njq.pdf). To some extent, answering the question whether *TC Heartland* changed the law requires an answer to a philosophical question: Is the law how the courts are actually ruling for years or is the law really the "correct" view as eventually established by the Supreme Court?

District courts have split on the issue. *See Westech Aerosol Corp. v. 3M Company*, 2017 U.S. Dist. LEXIS 95768 (W.D. Wash. June 21, 2017) (allowing a late challenge to patent venue on the grounds that *TC Heartland* was a "sea change" in the law of patent venue that could not have been "reasonably anticipated" by the defendant's counsel); *compare Cobalt Boats, LLC v. Sea Ray Boats, Inc*., 2017 U.S. Dist. LEXIS 90728 (E.D. Va. June 7, 2017) (refusing to allow a late challenge to venue because the Supreme Court's *Fourco* decision was always "binding law" and was "available to every defendant since 1957"). The Federal Circuit will have to resolve the split.

The larger lesson from these cases is that attorneys rely on the solidity of Federal Circuit precedent at their peril. Now that the Supreme Court is frequently reviewing Federal Circuit decisions, counsel must be aware of the extent to which Federal Circuit precedent might conflict with Supreme Court caselaw. Otherwise, counsel could miss out on objections later shown to be as meritorious and will be in the unenviable position of explaining to clients why a timely objection was not raised.

b. Where does a defendant company reside if a state has multiple districts? In the past, the answer to this question was relatively clear: The defendant company resided at the address shown in its articles of incorporation as its legal address within the state (its exact place of incorporation), and thus was a resident of the federal judicial district containing that location. 15 Wright, Miller and Cooper, Jurisdiction and Related Matters § 3823, at 222 (2nd 1986) (opining that, under the patent venue statute, "[a] corporation resides at the place of incorporation").

The Eastern District of Texas has, however, recently opined that corporations should be treated as resident in *every district* within their state of incorporation. *See Diem LLC v. BigCommerce, Inc.*, 2017 U.S. Dist. LEXIS 117602 (E.D. Tex. 2017). Under that view, every Texas corporation would be viewed as residing in the E.D. of Texas, even if it has no operations there whatsoever. That view seems wrong. It also seems inconsistent with the Supreme Court's decision in *Stonite*, which held that a Pennsylvania corporation residing in the Eastern District of Pennsylvania could not be sued in the Western District of Pennsylvania. Once again, the Federal Circuit is likely to decide this issue on appeal soon.

c. In which districts can non-resident defendants be sued? A defendant not resident in a particular district will be subject to suit in the district only if "the defendant [*a*] has committed acts of infringement and [*b*] has a regular and established place of business" in the district.

The first requirement (labeled "*a*" above) is that the defendant have committed acts of infringement "in" the district. In many instances, it is easy to determine the location of infringement—e.g., where a manufacturing plant produces an infringing product at a particular location or where a retail store sells an infringing product to a customer. In other instances, it can be difficult to define the location of infringement. For example, if a computer process is patented, some steps in the process may occur in one judicial district while others occur on the other side of the country. If all steps of a process have to occur within the judicial district, there may be no district in which the infringement occurs (this problem is analogous to the so-called divided infringement studied in Chapter 8.B.4). Induced or contributory infringement presents another issue: If a potential defendant takes actions *outside* the district inducing others to infringe *inside* the district, it would seem that the defendant has not committed acts of infringement "in" the district even though the induced parties have.

The second requirement is that the defendant needs to have a regular and established place of business in the district. Note first that this requirement is textually decoupled from the "acts of infringement" analysis. Thus, if a defendant commits no acts of infringement at its regular and established place of business but does infringe at another location in the district (e.g., at a trade show), the defendant should be subject to suit in the district.

What constitutes a "regular" and "established" place of business? The controversies usually center around employees—often salespeople—who work out of their homes. Circuit court case law is split, with the Federal Circuit taking a more pro-patentee position than the regional circuits. *See Grantham v. ChallengeCook Bros., Inc.*, 420 F.2d 1182 (7th Cir. 1969) (holding employee's home office is not a regular and established place of business); *American Cyanamid Co. v. Nopco Chem. Co.*, 388 F.2d 818 (4th 1968) (also holding home office is not a regular and established place of business even though the home office contained company brochures, invoices and communications); *compare In re Cordis Corp.*, 769 F.2d 733 (Fed. Cir. 1985) (holding a home office is a regular and established place of business where the home contained company sales literature, copies of communications and the company's products).

Shortly after the decision in *TC Heartland*, the Eastern District of Texas issued an opinion broadly defining the concept of "regular and established place of business" so that many home offices would qualify (and thus preserving for the E.D. Tex. a bigger share of patent litigation than it would have under a narrower definition). *See Raytheon Co. v. Cray, Inc.*, 2017 U.S. Dist. LEXIS 100887 (June 29, 2017 E.D. Tex.). That decision drew significant criticism, including a comment from Rep. Darrell Issa (R-Cal.) that the court was essentially "reject[ing] the Supreme Court's unanimous decision." *See* https://arstechnica.com/tech-policy/2017/07/will-

east-texas-be-able-to-keep-patent-cases-despite-the-supreme-court/. Once again, such issues will soon be at the Federal Circuit for decision.

Chap. 10.E.2. Laches

On pages 999-1000, the following paragraphs should replace the second paragraph in note 5:

In *SCA Hygiene Prods. v. First Quality Baby Prods.*, LLC, 137 S.Ct. 954 (2017), the Supreme Court extended its holding in *Petrella* to patent cases. The Court held that "*Petrella*'s reasoning easily fits" the patent statute, which also contains a statute of limitations (albeit one affording six years to bring suit, not just three). *See* 35 U.S.C. § 286.

Importantly, the Court rejected the Federal Circuit's view that § 282(b)(1) of the Patent Act codified the laches doctrine by providing that "unenforceability" is a defense to infringement. The Court reasoned:

> Section 282(b), which does not specifically mention laches, provides in relevant part as follows:
>
> "The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:
>
> "(1) Noninfringement, absence of liability for infringement or unenforceability."
>
> The en banc majority below never identified which word or phrase in § 282 codifies laches as a defense, but First Quality argues that laches falls within § 282(b)(1) because laches is a defense based on "unenforceability."
>
> SCA disputes this interpretation of § 282(b)(1), arguing that laches does not make a patent categorically unenforceable. Reply Brief 6-8; see *Aukerman*, 960 F. 2d, at 1030 ("Recognition of laches as a defense . . . does not affect the general enforceability of the patent against others"). We need not decide this question. Even if we assume for the sake of argument that § 282(b)(1) incorporates a laches defense *of some dimension*, it does not necessarily follow that this defense may be invoked to bar a claim for damages incurred within the period set out in § 286. Indeed, it would be exceedingly unusual, if not unprecedented, if Congress chose to include in the Patent Act both a statute of limitations for damages and a laches provision applicable to a damages claim. Neither the Federal Circuit, nor First Quality, nor any of First Quality's *amici* has identified a single federal statute that provides such dual protection against untimely claims.

137 S.Ct. at 963.

Does the Supreme Court's reasoning undermine the availability of prosecution laches where an infringement suit is brought outside of equity? Or does a case like *Symbol Tech.* show a proper use of laches even where a case is brought at law not in equity? Note that, of the two Supreme Court cases relied upon by the court in *Symbol Tech.*, one was a suit in equity (*Webster Electric*) and the other (*Woodbridge*) was a suit in the Court of Claims to recover "the amount of compensation which was due in equity and justice" for patent infringement by the United States.

Chapter 12: Antitrust and Patent Misuse

Chap. 12.C. Exhaustion and the "First Sale" Doctrine: In place of note 6 on page 1158 and the long note concerning *Lexmark v. Impression Products* on pages 1158 - 61, add the following case:

Impression Products v. Lexmark Int'l, Inc.
137 S. Ct. 1523 (2017)

Chief Justice Roberts delivered the opinion of the Court.

A United States patent entitles the patent holder (the "patentee"), for a period of 20 years, to "exclude others from making, using, offering for sale, or selling [its] invention throughout the United States or importing the invention into the United States." 35 U. S. C. §154(a). Whoever engages in one of these acts "without authority" from the patentee may face liability for patent infringement. §271(a).

When a patentee sells one of its products, however, the patentee can no longer control that item through the patent laws—its patent rights are said to "exhaust." The purchaser and all subsequent owners are free to use or resell the product just like any other item of personal property, without fear of an infringement lawsuit.

This case presents two questions about the scope of the patent exhaustion doctrine: First, whether 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. And second, whether a patentee exhausts its patent rights by selling its product outside the United States, where American patent laws do not apply. We conclude 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 or the location of the sale.

I

The underlying dispute in this case is about laser printers—or, more specifically, the cartridges that contain the powdery substance, known as toner, that laser printers use to make an image appear on paper. Respondent Lexmark International, Inc. designs, manufactures, and sells toner cartridges to consumers in the United States and around the globe. It owns a number of patents that cover components of those cartridges and the manner in which they are used. When toner cartridges run out of toner they can be refilled and used again. This creates an opportunity for other companies—known as remanufacturers—to acquire empty Lexmark cartridges from purchasers in the United States and abroad, refill them with toner, and then resell them at a lower price than the new ones Lexmark puts on the shelves.

Not blind to this business problem, Lexmark structures its sales in a way that encourages customers to return spent cartridges. It gives purchasers two options: One is to buy a toner cartridge at full price, with no strings attached. The other is to buy a cartridge at roughly 20-percent off through Lexmark's "Return Program." A customer who buys through the Return Program still owns the cartridge but, in exchange for the lower price, signs a contract agreeing to use it only once and to refrain from transferring the empty cartridge to anyone but Lexmark. To enforce this single-use/no-resale restriction, Lexmark installs a microchip on each Return Program cartridge that prevents reuse once the toner in the cartridge runs out.

Lexmark's strategy just spurred remanufacturers to get more creative. Many kept

acquiring empty Return Program cartridges and developed methods to counteract the effect of the microchips. With that technological obstacle out of the way, there was little to prevent the re-manufacturers from using the Return Program cartridges in their resale business. After all, Lexmark's contractual single-use/no-resale agreements were with the initial customers, not with downstream purchasers like the remanufacturers.

Lexmark, however, was not so ready to concede that its plan had been foiled. In 2010, it sued a number of remanufacturers, including petitioner Impression Products, Inc., for patent infringement with respect to two groups of cartridges. One group consists of Return Program cartridges that Lexmark sold within the United States. Lexmark argued that, because it expressly prohibited reuse and resale of these cartridges, the remanufacturers infringed the Lexmark patents when they refurbished and resold them. The other group consists of all toner cartridges that Lexmark sold abroad and that remanufacturers imported into the country. Lexmark claimed that it never gave anyone authority to import these cartridges, so the remanufacturers ran afoul of its patent rights by doing just that.

Eventually, the lawsuit was whittled down to one defendant, Impression Products, and one defense: that Lexmark's sales, both in the United States and abroad, exhausted its patent rights in the cartridges, so Impression Products was free to refurbish and resell them, and to import them if acquired abroad. Impression Products filed separate motions to dismiss with respect to both groups of cartridges. The District Court granted the motion as to the domestic Return Program cartridges, but denied the motion as to the cartridges Lexmark sold abroad. Both parties appealed.

The Federal Circuit considered the appeals en banc and ruled for Lexmark with respect to both groups of cartridges. The court began with the Return Program cartridges that Lexmark sold in the United States. Relying on its decision in *Mallinckrodt, Inc.* v. *Medipart, Inc.*, 976 F. 2d 700 (1992), the Federal Circuit held that a patentee may sell an item and retain the right to enforce, through patent infringement lawsuits, "clearly communicated, . . . lawful restriction[s] as to post-sale use or resale." 816 F. 3d 721, 735 (2016). The exhaustion doctrine, the court reasoned, derives from the prohibition on making, using, selling, or importing items "without authority." *Id.*, at 734 (quoting 35 U. S. C. § 271(a)). When you purchase an item you presumptively also acquire the authority to use or resell the item freely, but that is just a presumption; the same authority does not run with the item when the seller restricts post-sale use or resale. 816 F. 3d, at 742. Because the parties agreed that Impression Products knew about Lexmark's restrictions and that those restrictions did not violate any laws, the Federal Circuit concluded that Lexmark's sales had not exhausted all of its patent rights, and that the company could sue for infringement when Impression Products refurbished and resold Return Program cartridges.

As for the cartridges that Lexmark sold abroad, the Federal Circuit once again looked to its precedent. In *Jazz Photo Corp.* v. *International Trade Commission*, 264 F. 3d 1094 (2001), the court had held that a patentee's decision to sell a product abroad did not terminate its ability to bring an infringement suit against a buyer that "import[ed] the article and [sold] . . . it in the United States." 816 F. 3d, at 726-727. That rule, the court concluded, makes good sense: Exhaustion is justified when a patentee receives "the reward available from [selling in] American markets," which does not occur when the patentee sells overseas, where the American patent offers no protection and therefore cannot bolster the price of the patentee's goods. *Id.*, at 760-761. As a result, Lexmark was free to exercise its patent rights to sue Impression Products for bringing the foreign-sold cartridges to market in the United States.

Judge Dyk, joined by Judge Hughes, dissented. In their view, selling the Return Program cartridges in the United States exhausted Lexmark's patent rights in those items because any "authorized sale of a patented article . . . free[s] the article from any restrictions on use or sale based on the patent laws." *Id.*, at 775-776. As for the foreign cartridges, the dissenters would have held that a sale abroad also results in exhaustion, unless the seller "explicitly reserve[s] [its] United States patent rights" at the time of sale. *Id.*, at 774, 788. Because Lexmark failed to make such an express reservation, its foreign sales exhausted its patent rights.

We granted certiorari to consider the Federal Circuit's decisions with respect to both domestic and international exhaustion, and now reverse.

II

A

First up are the Return Program cartridges that Lexmark sold in the United States. We conclude that Lexmark exhausted its patent rights in these cartridges the moment it sold them. The single-use/no-resale restrictions in Lexmark's contracts with customers may have been clear and enforceable under contract law, but they do not entitle Lexmark to retain patent rights in an item that it has elected to sell.

The Patent Act grants patentees the "right to exclude others from making, using, offering for sale, or selling [their] invention[s]." 35 U. S. C. §154(a). For over 160 years, the doctrine of patent exhaustion has imposed a limit on that right to exclude. See *Bloomer* v. *McQuewan*, 55 U.S. 539 (1853). The limit functions automatically: When a patentee chooses to sell an item, that product "is no longer within the limits of the monopoly" and instead becomes the "private, individual property" of the purchaser, with the rights and benefits that come along with ownership. *Id.*, at 549-550. A patentee is free to set the price and negotiate contracts with purchasers, but may not, "*by virtue of his patent*, control the use or disposition" of the product after ownership passes to the purchaser. *United States* v. *Univis Lens Co.*, 316 U. S. 241, 250 (1942) (emphasis added). The sale "terminates all patent rights to that item." *Quanta Computer, Inc.* v. *LG Electronics, Inc.*, 553 U. S. 617, 625 (2008).

This well-established 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. *Univis*, 316 U. S., at 250. But once a patentee sells an item, it has "enjoyed all the rights secured" by that limited monopoly. *Keeler* v. *Standard Folding Bed Co.*, 157 U. S. 659, 661 (1895). 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." *Univis*, 316 U. S., at 251.

We have explained in the context of copyright law that exhaustion has "an impeccable historic pedigree," tracing its lineage back to the "common law's refusal to permit restraints on the alienation of chattels." *Kirtsaeng* v. *John Wiley & Sons, Inc.*, 568 U. S. 519, 538 (2013). As Lord Coke put it in the 17th century, if an owner restricts the resale or use of an item after selling it, that restriction "is voide, because . . . it is against Trade and Traffique, and bargaining and contracting betweene man and man." 1 E. Coke, Institutes of the Laws of England §360, p. 223 (1628); see J. Gray, Restraints on the Alienation of Property §27, p. 18 (2d ed. 1895) ("A condition or conditional limitation on alienation attached to a transfer of the entire interest in personalty is as void as if attached to a fee simple in land").

This venerable principle is not, as the Federal Circuit dismissively viewed it, merely "one common-law jurisdiction's general judicial policy at one time toward anti-alienation restrictions." 816 F. 3d, at 750. Congress enacted and has repeatedly revised the Patent Act against the backdrop of the hostility toward restraints on alienation. That enmity is reflected in the exhaustion doctrine. The patent laws do not include the right to "restrain[ ] . . . further alienation" after an initial sale; such conditions have been "hateful to the law from Lord Coke's day to ours" and are "obnoxious to the public interest." *Straus* v. *Victor Talking Machine Co.*, 243 U. S. 490, 501. "The inconvenience and annoyance to the public that an opposite conclusion would occasion are too obvious to require illustration." *Keeler*, 157 U. S., at 667.

But an illustration never hurts. Take a shop that restores and sells used cars. The business works because the shop can rest assured that, so long as those bringing in the cars own them, the shop is free to repair and resell those vehicles. That smooth flow of commerce would sputter if companies that make the thousands of parts that go into a vehicle could keep their patent rights after the first sale. Those companies might, for instance, restrict resale rights and sue the shop owner for patent infringement. And even if they refrained from imposing such restrictions, the very threat of patent liability would force the shop to invest in efforts to protect itself from hidden lawsuits. Either way, extending the patent rights beyond the first sale would clog the channels of commerce, with little benefit from the extra control that the patentees retain. And advances in technology, along with increasingly complex supply chains, magnify the problem. See Brief for Costco Wholesale Corp. et al. as *Amici Curiae* 7-9; Brief for Intel Corp. et al. as *Amici Curiae* 17, n. 5 ("A generic smartphone assembled from various high-tech components could practice an estimated 250,000 patents").

This Court accordingly has long held that, even when a patentee sells an item under an express restriction, the patentee does not retain patent rights in that product. In *Boston Store of Chicago* v. *American Graphophone Co.*, for example, a manufacturer sold graphophones—one of the earliest devices for recording and reproducing sounds—to retailers under contracts requiring those stores to resell at a specific price. 246 U. S. 8, 17-18 (1918). When the manufacturer brought a patent infringement suit against a retailer who sold for less, we concluded that there was "no room for controversy" about the result: By selling the item, the manufacturer placed it "beyond the confines of the patent law, [and] could not, by qualifying restrictions as to use, keep [it] under the patent monopoly." *Id.*, at 20, 25.

Two decades later, we confronted a similar arrangement in *United States* v. *Univis Lens Co*. There, a company that made eyeglass lenses authorized an agent to sell its products to wholesalers and retailers only if they promised to market the lenses at fixed prices. The Government filed an antitrust lawsuit, and the company defended its arrangement on the ground that it was exercising authority under the Patent Act. We held that the initial sales "relinquish[ed] . . . the patent monopoly with respect to the article[s] sold," so the "stipulation . . . fixing resale prices derive[d] no support from the patent and must stand on the same footing" as restrictions on unpatented goods. 316 U. S., at 249-251.

It is true that *Boston Store* and *Univis* involved resale price restrictions that, at the time of those decisions, violated the antitrust laws. But in both cases it was the sale of the items, rather than the illegality of the restrictions, that prevented the patentees from enforcing those resale price agreements through patent infringement suits. And if there were any lingering doubt that patent exhaustion applies even when a sale is subject to an express, otherwise lawful restriction, our recent decision in *Quanta Computer, Inc.* v. *LG Electronics, Inc.* settled the matter. In that case, a technology company—with authorization from the patentee—sold microprocessors under contracts requiring purchasers to use those processors with other parts that the company

manufactured. One buyer disregarded the restriction, and the patentee sued for infringement. Without so much as mentioning the lawfulness of the contract, we held that the patentee could not bring an infringement suit because the "authorized sale . . . took its products outside the scope of the patent monopoly." 553 U. S., at 638.

Turning to the case at hand, we conclude that this well-settled line of precedent allows for only one answer: Lexmark cannot bring a patent infringement suit against Impression Products to enforce the single-use/no-resale provision accompanying its Return Program cartridges. Once sold, the Return Program cartridges passed outside of the patent monopoly, and whatever rights Lexmark retained are a matter of the contracts with its purchasers, not the patent law.

B

The Federal Circuit reached a different result largely because it got off on the wrong foot. The "exhaustion doctrine," the court believed, "must be understood as an interpretation of" the infringement statute, which prohibits anyone from using or selling a patented article "without authority" from the patentee. 816 F. 3d, at 734 (quoting 35 U. S. C. §271(a)). Exhaustion reflects a default rule that a patentee's decision to sell an item "*presumptively* grant[s] 'authority' to the purchaser to use it and resell it." 816 F. 3d, at 742. But, the Federal Circuit explained, the patentee does not have to hand over the full "bundle of rights" every time. *Id.*, at 741 (internal quotation marks omitted). If the patentee expressly withholds a stick from the bundle—perhaps by restricting the purchaser's resale rights—the buyer never acquires that withheld authority, and the patentee may continue to enforce its right to exclude that practice under the patent laws.

The misstep in this logic is that the exhaustion doctrine is not a presumption about the authority that comes along with a sale; it is instead a limit on "the scope of the *patentee's rights*." *United States* v. *General Elec. Co.*, 272 U. S. 476, 489 (1926) (emphasis added). The right to use, sell, or import an item exists independently of the Patent Act. What a patent adds—and grants exclusively to the patentee—is a limited right to prevent others from engaging in those practices. See *Crown Die & Tool Co.* v. *Nye Tool & Machine Works*, 261 U. S. 24, 35 (1923). Exhaustion extinguishes that exclusionary power. See *Bloomer*, 55 U.S. 539 at 549 (the purchaser "exercises no rights created by the act of Congress, nor does he derive title to [the item] by virtue of the . . . exclusive privilege granted to the patentee"). As a result, the sale transfers the right to use, sell, or import because those are the rights that come along with ownership, and the buyer is free and clear of an infringement lawsuit because there is no exclusionary right left to enforce.

The Federal Circuit also expressed concern that preventing patentees from reserving patent rights when they sell goods would create an artificial distinction between such sales and sales by licensees. Patentees, the court explained, often license others to make and sell their products, and may place restrictions on those licenses. A computer developer could, for instance, license a manufacturer to make its patented devices and sell them only for non-commercial use by individuals. If a licensee breaches the license by selling a computer for commercial use, the patentee can sue the licensee for infringement. And, in the Federal Circuit's view, our decision in *General Talking Pictures Corp.* v. *Western Elec. Co.*, 304 U. S. 175, aff'd on reh'g, 305 U. S. 124 (1938), established that—when a patentee grants a license "under clearly stated restrictions on post-sale activities" of those who purchase products from the licensee—the patentee can *also* sue for infringement those purchasers who knowingly violate the restrictions. 816 F. 3d, at 743-744. If patentees can employ licenses to impose post-sale restrictions on purchasers that are enforceable through infringement suits, the court concluded, it would make little sense to prevent patentees from doing so when they sell directly to consumers.

The Federal Circuit's concern is misplaced. A patentee can impose restrictions on licensees because a license does not implicate the same concerns about restraints on alienation as a sale. Patent exhaustion reflects the principle that, when an item passes into commerce, it should not be shaded by a legal cloud on title as it moves through the marketplace. But a license is not about passing title to a product, it is about changing the contours of the patentee's monopoly: The patentee agrees not to exclude a licensee from making or selling the patented invention, expanding the club of authorized producers and sellers. See *General Elec. Co.*, 272 U. S., at 489-490. Because the patentee is exchanging rights, not goods, it is free to relinquish only a portion of its bundle of patent protections.

A patentee's authority to limit *licensees* does not, as the Federal Circuit thought, mean that patentees can use licenses to impose post-sale restrictions on *purchasers* that are enforceable through the patent laws. So long as a licensee complies with the license when selling an item, the patentee has, in effect, authorized the sale. That licensee's sale is treated, for purposes of patent exhaustion, as if the patentee made the sale itself. The result: The sale exhausts the patentee's rights in that item. See *Hobbie* v. *Jennison*, 149 U. S. 355, 362-363 (1893). A license may require the licensee to impose a restriction on purchasers, like the license limiting the computer manufacturer to selling for non-commercial use by individuals. But if the licensee does so—by, perhaps, having each customer sign a contract promising not to use the computers in business—the sale nonetheless exhausts all patent rights in the item sold. See *Motion Picture Patents Co.* v. *Universal Film Mfg. Co.*, 243 U. S. 502, 506-507 (1917). The purchasers might not comply with the restriction, but the only recourse for the licensee is through contract law, just as if the patentee itself sold the item with a restriction.

General Talking Pictures involved a fundamentally different situation: There, a licensee "knowingly ma[de] . . . sales . . . *outside* the scope of its license." 304 U. S., at 181-182 (emphasis added). We treated the sale "as if no license whatsoever had been granted" by the patentee, which meant that the patentee could sue both the licensee and the purchaser—who knew about the breach—for infringement. *General Talking Pictures Corp.* v. *Western Elec. Co.*, 305 U. S. 124, 127 (1938). This does not mean that patentees can use licenses to impose post-sale restraints on purchasers. Quite the contrary: The licensee infringed the patentee's rights because it did *not* comply with the terms of its license, and the patentee could bring a patent suit against the purchaser only because the purchaser participated in the licensee's infringement. *General Talking Pictures*, then, stands for the modest principle that, if a patentee has not given authority for a licensee to make a sale, that sale cannot exhaust the patentee's rights.

In sum, patent exhaustion is uniform and automatic. Once a patentee decides to sell—whether on its own or through a licensee—that sale exhausts its patent rights, regardless of any post-sale restrictions the patentee purports to impose, either directly or through a license.

III

Our conclusion that Lexmark exhausted its patent rights when it sold the domestic Return Program cartridges goes only halfway to resolving this case. Lexmark also sold toner cartridges abroad and sued Impression Products for patent infringement for "importing [Lexmark's] invention into the United States." 35 U. S. C. §154(a). Lexmark contends that it may sue for infringement with respect to all of the imported cartridges—not just those in the Return Program—because a foreign sale does not trigger patent exhaustion unless the patentee "expressly or implicitly transfer[s] or license[s]" its rights. Brief for Respondent 36-37. The Federal Circuit agreed, but we do not. An authorized sale outside the United States, just as one within the United States, exhausts all rights under the Patent Act.

This question about international exhaustion of intellectual property rights has also arisen in the context of copyright law. Under the "first sale doctrine," which is codified at 17 U. S. C. §109(a), when a copyright owner sells a lawfully made copy of its work, it loses the power to restrict the purchaser's freedom "to sell or otherwise dispose of . . . that copy." In *Kirtsaeng* v. *John Wiley & Sons, Inc.*, we held that this "'first sale' [rule] applies to copies of a copyrighted work lawfully made [and sold] abroad." 568 U. S., at 525. We began with the text of §109(a), but it was not decisive: The language neither "restrict[s] the scope of [the] 'first sale' doctrine geographically," nor clearly embraces international exhaustion. *Id.,* at 528-533. What helped tip the scales for global exhaustion was the fact that the first sale doctrine originated in "the common law's refusal to permit restraints on the alienation of chattels." *Id.,* at 538. That "common-law doctrine makes no geographical distinctions." *Id.,* at 539. The lack of any textual basis for distinguishing between domestic and international sales meant that "a straightforward application" of the first sale doctrine required the conclusion that it applies overseas. *Id.,* at 540 (internal quotation marks omitted).

Applying patent exhaustion to foreign sales is just as straightforward. Patent exhaustion, too, has its roots in the antipathy toward restraints on alienation, see *supra*, at 6-8, and nothing in the text or history of the Patent Act shows that Congress intended to confine that borderless common law principle to domestic sales. In fact, Congress has not altered patent exhaustion at all; it remains an unwritten limit on the scope of the patentee's monopoly. See *Astoria Fed. Sav. & Loan Ass'n* v. *Solimino*, 501 U.S. 104, 108 (1991) ("[W]here a common-law principle is well established, . . . courts may take it as given that Congress has legislated with an expectation that the principle will apply except when a statutory purpose to the contrary is evident" (internal quotation marks omitted)). And differentiating the patent exhaustion and copyright first sale doctrines would make little theoretical or practical sense: The two share a "strong similarity . . . and identity of purpose," *Bauer & Cie* v. *O'Bauer & Cie*, 229 U.S. 1, 13 (1913), and many everyday products—"automobiles, microwaves, calculators, mobile phones, tablets, and personal computers"—are subject to both patent and copyright protections, see *Kirtsaeng*, 568 U. S., at 545; Brief for Costco Wholesale Corp. et al. as *Amici Curiae* 14-15. There is a "historic kinship between patent law and copyright law," *Sony Corp. of America* v. *Universal City Studios, Inc.*, 464 U. S. 417, 439 (1984), and the bond between the two leaves no room for a rift on the question of international exhaustion.

Lexmark sees the matter differently. The Patent Act, it points out, limits the patentee's "right to exclude others" from making, using, selling, or importing its products to acts that occur in the United States. 35 U. S. C. §154(a). A domestic sale, it argues, triggers exhaustion because the sale compensates the patentee for "surrendering [those] *U. S.* rights." Brief for Respondent 38. A foreign sale is different: The Patent Act does not give patentees exclusionary powers abroad. Without those powers, a patentee selling in a foreign market may not be able to sell its product for the same price that it could in the United States, and therefore is not sure to receive "the reward guaranteed by U. S. patent law." *Id.,* at 39 (internal quotation marks omitted). Absent that reward, says Lexmark, there should be no exhaustion. In short, there is no patent exhaustion from sales abroad because there are no patent rights abroad to exhaust.

The territorial limit on patent rights is, however, no basis for distinguishing copyright protections; those protections "do not have any extraterritorial operation" either. 5 M. Nimmer & D. Nimmer, Copyright §17.02, p. 17-26 (2017). Nor does the territorial limit support the premise of Lexmark's argument. Exhaustion is a separate limit on the patent grant, and does not depend on the patentee receiving some undefined premium for selling the right to access the American market. A purchaser buys an item, not patent rights. And exhaustion is triggered by the patentee's

decision to give that item up and receive whatever fee it decides is appropriate "for the article and the invention which it embodies." *Univis*, 316 U. S., at 251. The patentee may not be able to command the same amount for its products abroad as it does in the United States. But the Patent Act does not guarantee a particular price, much less the price from selling to American consumers. Instead, the right to exclude just ensures that the patentee receives one reward—of whatever amount the patentee deems to be "satisfactory compensation," *Keeler*, 157 U. S., at 661—for every item that passes outside the scope of the patent monopoly.

This Court has addressed international patent exhaustion in only one case, *Boesch* v. *Graff*, decided over 125 years ago. All that case illustrates is that a sale abroad does not exhaust a patentee's rights when the patentee had nothing to do with the transaction. *Boesch*—from the days before the widespread adoption of electrical lighting—involved a retailer who purchased lamp burners from a manufacturer in Germany, with plans to sell them in the United States. The manufacturer had authority to make the burners under German law, but there was a hitch: Two individuals with no ties to the German manufacturer held the American patent to that invention. These patentees sued the retailer for infringement when the retailer imported the lamp burners into the United States, and we rejected the argument that the German manufacturer's sale had exhausted the American patentees' rights. The German manufacturer had no permission to sell in the United States from the American patentees, and the American patentees had not exhausted their patent rights in the products because they had not sold them to anyone, so "purchasers from [the German manufacturer] could not be thereby authorized to sell the articles in the United States." 133 U. S. 697, 703 (1890).

Our decision did not, as Lexmark contends, exempt all foreign sales from patent exhaustion. See Brief for Respondent 44-45. Rather, it reaffirmed the basic premise that only the patentee can decide whether to make a sale that exhausts its patent rights in an item. The American patentees did not do so with respect to the German products, so the German sales did not exhaust their rights.

Finally, the United States, as an *amicus*, advocates what it views as a middle-ground position: that "a foreign sale authorized by the U. S. patentee exhausts U. S. patent rights unless those rights are expressly reserved." Brief for United States 7-8. Its position is largely based on policy rather than principle. The Government thinks that an overseas "buyer's legitimate expectation" is that a "sale conveys all of the seller's interest in the patented article," so the presumption should be that a foreign sale triggers exhaustion. *Id.*, at 32-33. But, at the same time, "lower courts long ago coalesced around" the rule that "a patentee's express reservation of U. S. patent rights at the time of a foreign sale will be given effect," so that option should remain open to the patentee. *Id.*, at 22 (emphasis deleted).

The Government has little more than "long ago" on its side. In the 1890s, two circuit courts—in cases involving the same company—did hold that patentees may use express restrictions to reserve their patent rights in connection with foreign sales. See *Dickerson* v. *Tinling*, 84 F. 192, 194-195 (CA8 1897); *Dickerson* v. *Matheson*, 57 F. 524, 527 (CA2 1893). But no "coalesc[ing]" ever took place: Over the following hundred-plus years, only a smattering of lower court decisions mentioned this express-reservation rule for foreign sales. See, *e.g.*, *Sanofi, S. A.* v. *Med-Tech Veterinarian Prods., Inc.*, 565 F. Supp. 931, 938 (NJ 1983). And in 2001, the Federal Circuit adopted its blanket rule that foreign sales do not trigger exhaustion, even if the patentee fails to expressly reserve its rights. *Jazz Photo*, 264 F. 3d, at 1105. These sparse and inconsistent decisions provide no basis for any expectation, let alone a settled one, that patentees can reserve patent rights when they sell abroad.

The theory behind the Government's express-reservation rule also wrongly focuses on the likely expectations of the patentee and purchaser during a sale. Exhaustion does not arise because of the parties' expectations about how sales transfer patent rights. More is at stake when it comes to patents than simply the dealings between the parties, which can be addressed through contract law. Instead, exhaustion occurs because, in a sale, the patentee elects to give up title to an item in exchange for payment. Allowing patent rights to stick remora-like to that item as it flows through the market would violate the principle against restraints on alienation. Exhaustion does not depend on whether the patentee receives a premium for selling in the United States, or the type of rights that buyers expect to receive. As a result, restrictions and location are irrelevant; what matters is the patentee's decision to make a sale.

* * *

The judgment of the United States Court of Appeals for the Federal Circuit is reversed, and the case is remanded for further proceedings consistent with this opinion.

It is so ordered.

Justice GORSUCH took no part in the consideration or decision of this case.

Justice GINSBURG, concurring in part and dissenting in part.

I concur in the Court's holding regarding domestic exhaustion—a patentee who sells a product with an express restriction on reuse or resale may not enforce that restriction through an infringement lawsuit, because the U. S. sale exhausts the U. S. patent rights in the product sold. See *ante*, at 5-13. I dissent, however, from the Court's holding on international exhaustion. A foreign sale, I would hold, does not exhaust a U. S. inventor's U. S. patent rights.

Patent law is territorial. When an inventor receives a U. S. patent, that patent provides no protection abroad. See *Deepsouth Packing Co.* v. *Laitram Corp.*, 406 U. S. 518, 531 (1972) ("Our patent system makes no claim to extraterritorial effect."). See also 35 U. S. C. §271(a) (establishing liability for acts of patent infringement "within the United States" and for "import[ation] into the United States [of] any patented invention"). A U. S. patentee must apply to each country in which she seeks the exclusive right to sell her invention. *Microsoft Corp.* v. *AT&T Corp.*, 550 U. S. 437, 456 (2007). And patent laws vary by country; each country's laws "may embody different policy judgments about the relative rights of inventors, competitors, and the public in patented inventions." *Microsoft*, 550 U. S., at 455 (internal quotation marks omitted).

Because a sale abroad operates independently of the U. S. patent system, it makes little sense to say that such a sale exhausts an inventor's U. S. patent rights. U. S. patent protection accompanies none of a U. S. patentee's sales abroad—a competitor could sell the same patented product abroad with no U. S.-patent-law consequence. Accordingly, the foreign sale should not diminish the protections of U. S. law in the United States.

The majority disagrees, in part because this Court decided, in *Kirtsaeng* v. *John Wiley & Sons, Inc.*, 568 U. S. 519, 525 (2013), that a foreign sale exhausts U. S. *copyright* protections. Copyright and patent exhaustion, the majority states, "share a strong similarity." *Ante*, at 14 (internal quotation marks omitted). I dissented from our decision in *Kirtsaeng* and adhere to the view that a foreign sale should not exhaust U. S. copyright protections. See 568 U. S., at 557.

But even if I subscribed to *Kirtsaeng*'s reasoning with respect to copyright, that decision should bear little weight in the patent context. Although there may be a "historical kinship" between patent law and copyright law, *Sony Corp. of America* v. *Universal City Studios, Inc.*, 464 U. S. 417, 439 (1984), the two "are not identical twins," *id*, at 439, n. 19. The Patent Act contains no analogue to 17 U. S. C. §109(a), the Copyright Act first-sale provision analyzed in *Kirtsaeng*. See *ante*, at 13-14. More importantly, copyright protections, unlike patent protections, are harmonized across countries. Under the Berne Convention, which 174 countries have joined,[1] members "agree to treat authors from other member countries as well as they treat their own." *Golan* v. *Holder*, 565 U. S. 302, 308 (2012) (citing Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, as revised at Stockholm on July 14, 1967, Arts. 1, 5(1), 828 U. N. T. S. 225, 231-233). The copyright protections one receives abroad are thus likely to be similar to those received at home, even if provided under each country's separate copyright regime.

For these reasons, I would affirm the Federal Circuit's judgment with respect to foreign exhaustion.

NOTES ON *IMPRESSION PRODUCTS v. LEXMARK*

1. A Simple But Powerful Exhaustion Doctrine. The Supreme Court's decision provides a simple to understand, and quite powerful, exhaustion doctrine: Any authorized sale by the patentee, anywhere in the world, exhausts U.S. patent rights with respect to that article. The result of such an authorized sale is that the purchaser may use, sell, offer to sell or import the patented article into the United States without triggering any liability under U.S. *patent law*.

The ruling does not, however, hold that authorized sales free purchasers *generally* to use, sell, offer to sell or import the patented article. Indeed, the Court expressly notes that an authorized purchaser could be liable under contract law if the patentee sold the article with a binding contract restricting subsequent uses, sales or importations.

In addition to contract law, other bodies of law might also restrict the freedom of purchasers and others. For example, regulation by the Food & Drug Administration (FDA) generally prevents the importation into the United States of drugs produced in foreign countries, "including foreign-made versions of U.S. approved drugs, that have not been manufactured in accordance with and pursuant to an FDA approval." *See Information on Importation of Drugs Prepared by the Division of Import Operations and Policy, FDA*, available at https://www.fda.gov/forindustry/importprogram/ucm173751.htm (citing 21 U.S.C. § 331). Consider, for example, a pharmaceutical patentee that produces in a Canadian manufacturing plant a Canadian version of a U.S. approved drug. If the manufacturing plant has not been approved by the FDA (even if Canadian authorities have approved it), the Canadian version of the drug might be barred from importation into the United States not by patent law, but by the Food & Drug and Cosmetics Act (the statute enforced by the FDA).

2. Exhaustion as a Limit on Statutory Scope. The *Impressions Product* decision also provides a fairly clear theoretical basis for the exhaustion doctrine: It is a "a limit on 'the scope of the *patentee's rights*'" (emphasis by the Court). Thus, the basis for the exhaustion doctrine is an implied limit on the grant of patent rights in 35 U.S.C. § 154(a)(1), which confers on patentees

[1] See WIPO-Administered Treaties: Contracting Parties: Berne Convention, www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty_ id=5 (as last visited May 25, 2017).

the "right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States." Though that grant of rights appears unqualified, the exhaustion doctrine operates to restrict the scope of the grant so that patent law does not interfere with other legal principles, including, most prominently, the general common law hostility to restraints on alienation, but also the law governing tortious interference with contract, security interests, personal property servitudes, etc. The exhaustion doctrine rests not so much on a policy forbidding contractual conditions or property-based encumbrances, but on a policy of making sure that any such conditions are enforced through other areas of law.

Consider, for example, a patentee who wants to sell patented lasers both (i) for educational and research purposes and (ii) for other commercial purposes. The patentee wants to give a steep discount to those purchasing the lasers for educational and research purposes. (Such discounts are common in goods embodying intellectual property, and universities and their students are frequently the beneficiaries.) If the patentee sells a laser at $100 for research and educational purposes but is also selling the same laser at $1000 for commercial purposes, the patentee might worry that some educational purchasers could resell their lasers to commercial users and thereby undermine the higher price for commercial purposes. That worry is legitimate because the exhaustion doctrine holds that, once the laser is sold, the patentee cannot rely on patent infringement actions to control the downstream uses of the laser.

What can the patentee do to enforce the limitation-on-use condition in such circumstances? Quite a lot, it turns out. First, the patentee can impose a contractual condition on the purchaser that it use the laser only for research and educational purposes *and* that it not sell the laser to anyone else except those who would also be using the laser for research and educational purposes. If the purchaser resells to a commercial entity, the patentee will have a contract remedy against the first purchaser (i.e., against the entity that purchased from the patentee, not against the commercial entity).

That's one remedy, but suppose that the patentee really wants a remedy against the downstream commercial entity that bought from the first purchaser? Commercial law provides several ways to get such a remedy. For example, the patentee may be able to sue the downstream commercial purchaser for tortious interference with contract. Alternatively, the patentee could impose a security interest on the laser, and the security interest would allow suit against the downstream purchaser.

Each of those causes of action are subject to caveats and conditions—most importantly, the patentee is almost certainly going to have to prove that the downstream commercial entity had actual or constructive notice of the limitation on the laser's use. Such caveats and conditions are what's really at stake with the exhaustion doctrine because patent infringement actions are generally not subject to those limitations. But once those stakes are appreciated, the exhaustion doctrine begins to make a lot more sense, for the doctrine merely forces patentees, when they seek to impose binding conditions on property that is being sold into commerce, to enforce those conditions using the same general commercial law rules that governs all other sales of goods. This view is explained more fully in John F. Duffy and Richard M. Hynes, *Statutory Domain and the Commercial Law of Intellectual Property*, 102 Va. L. Rev. 1 (2016). (http://ssrn.com/abstract=2599074).

3. Ambiguity about Licenses. The Supreme Court leaves open one crucial ambiguity about the exhaustion doctrine, which is whether the patent owner can escape the exhaustion doctrine entirely by describing a transaction not as a "sale," but merely as a transfer of possession of the patented article coupled with a "license" to use it. In other words, can the patentee escape the exhaustion doctrine merely by refusing to characterize the transaction as a "sale"? That issue

was not presented in *Impression Products* because both parties stipulated that Lexmark sold cartridges to its customers. But if in the future Lexmark told its customers that Lexmark continued to own the cartridges and that the customers were merely using the cartridges subject to a one-use-only-no-refill license, would the exhaustion doctrine apply?

One possible source of law to answer this question is the Uniform Commercial Code, which generally provides that any attempt to retain title in goods notwithstanding shipment or delivery to a buyer "is limited in effect to a reservation of a 'security interest.'" UCC § 1-201(b)(35). In other words, an attempt to retain title despite the transfer of possession is treated as a sale, with the possible reservation of a security interest in the goods. *See* Duffy & Hynes, *supra*, at 71; Brian W. Carver, *Why License Agreements Do Not Control Copy Ownership: First Sales and Essential Copies*, 25 Berkeley Tech. L.J. 1887, 1914-15 (2010); John A. Rothchild, *The Incredible Shrinking First-Sale Rule:Are Software Resale Limits Lawful?*, 57 Rutgers L. Rev. 1, 39, 62 (2004).

If the UCC applies (perhaps a big "if"), then the transaction would constitute a sale and the exhaustion doctrine would apply—although Lexmark would still have contractual rights and perhaps also a security interest to enforce those contractual rights.

For the contrary position arguing that the licensing of software is not a sale and does not trigger exhaustion under *Impression Products* (at least in the context of software), see Robert W. Gomulkiewicz, *Is the License Still the Product?* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3021895.

All of this is, however, speculation because such cases have not yet arisen. Prior to *Impression Products*, firms like Lexmark could characterize transactions as sales and still enforce their contractual conditions with patent infringement remedies. *Impression Products* now creates incentives for firms to use alternative formulations (e.g., calling the transaction a license or a lease). Such transactions are bound to occur and bound to generate litigation.

4. What's Good Public Policy? The Supreme Court asserts that, without the exhaustion doctrine, the "smooth flow of commerce would sputter" because it would be burdensome to keep track of all the conditions imposed on patented goods. Is that true?

Here are three arguments to the contrary. First, the Federal Circuit's precedent in *Mallinckrodt, Inc.* v. *Medipart, Inc.* had been in place for a quarter century prior to *Impression Products* and conditions on patented products did not seem to cause the flow of commerce in the United States to sputter in any obvious way.

Second, commercial law often does allow parties to place encumbrances such as security interests on personal property, and the enforceability of those encumbrances is generally viewed as a net positive economically, not a negative. Of course, commercial law typically requires that parties have notice of encumbrances that are enforced against them, but couldn't patent law be adjusted to require such notice?

Third, enforceable conditions on sales might foster economic efficiency by allowing producers to provide discounts to certain classes of consumers who may not be able to afford the good at full price. Thus, for example, Lexmark gave a 20% discount for consumers who agreed to the conditions of the "Return Program" cartridge. For an argument that the mandatory exhaustion is bad economic policy, *see* Jonathan Barnett & Ted Sichelman, *An Economic Argument Against Mandatory Patent Exhaustion*, https://patentlyo.com/patent/2017/03/economic-mandatory-exhaustion.html (concluding that "a mandatory, 'per se' rule [of exhaustion] assumes all downstream limitations are pernicious, when the economics show otherwise").