

Although some agreements may have anti-competitive effects, patent licenses can often be expected to contribute to an efficiency-enhancing integration of economic activity and therefore such agreements generally have to be analyzed pursuant to the rule of reason<sup>1396</sup>.

### c) Summary

The starting point for evaluating practices that extend beyond a patent's expiration is to analyse whether the patent in question confers market power or not. In general, standard antitrust analysis applies to practices that have the potential to extend the market power conferred by a patent beyond its expiration. However, **even collecting royalties beyond a patent's statutory term can be efficient**. Although there are limitations on a patent owner's ability to collect royalties beyond a patent's statutory term<sup>1397</sup>, that practice may permit licensees to pay lower royalty rates over a longer period of time, which reduces the deadweight loss associated with a patent monopoly and allows the patent holder to recover the full value of the patent, thereby preserving innovation incentives.

## 7. Acquisition of IP-rights

Certain transfers of intellectual property rights are most appropriately analyzed by applying the principles and standards used to analyze mergers, particularly those in the Horizontal Merger Guidelines.

The Agencies apply the **merger analysis** to an **outright sale of all of its IP-rights** by an intellectual property owner **and** to a transaction in which a person obtains through grant, sale, or other transfer an **exclusive license for intellectual property** (eg a license that precludes all other persons, including the licensor, from using the licensed intellectual property).

As stated above, the **safety zone does not apply** to such a transfers of intellectual property – such transactions may be assessed under section 7 of the Clayton Act, sections 1 and 2 of the Sherman Act and section 5 of the Federal Trade Commission Act<sup>1398</sup>.

## 8. Cross-licensing agreements and patent pools

Both, cross-licenses and patent pools are based on **reciprocal agreements** to share patent rights<sup>1399</sup> which may foster efficiencies; although pools and cross-licenses seek to achieve efficiencies via reciprocal agreements, its methods differ in fundamental ways.

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1396 See also Antitrust-IP Guidelines § 3.4.

1397 See *Brulotte v. Thys Co.*, 379 U.S. 29 (1964).

1398 See in general Antitrust Guidelines for the licensing of Intellectual Property, U.S. Department of Justice und Federal Trade Commission, 6. April 1995.

1399 See Joel I. Klein, Acting Assistant Attorney Gen., U.S. Dep't of Justice, Cross-Licensing and Antitrust Law, Address Before the American Intellectual Property Law Association 3 n.3 (May 2, 1997).

In many industries, the patent rights necessary to commercialize a product are frequently controlled by multiple rights holders. This fragmentation of rights can increase the costs of bringing products to market due to the transaction costs of negotiating multiple licenses and greater cumulative royalty payments.

**Portfolio cross-licenses and patent pools** can help solve the problems created by these overlapping patent rights, or patent thickets, by removing the need for patent-by-patent licensing, thus reducing transaction costs for licensees. In addition, patent-pooling agreements may mitigate royalty stacking and hold-up problems that can occur when multiple patent holders individually demand royalties from a licensee. At the same time, portfolio cross licenses and patent pools preserve the financial incentives for inventors to commercialize their existing innovations and undertake new, potentially patentable R&D.

Although both cross-licensing and patent-pooling agreements have the potential to generate significant efficiencies, they may also generate anti-competitive effects if the arrangements result in **price fixing, coordinated output restrictions** among competitors, or **foreclosure of innovation**:

For instance, horizontal coordination among the pool's licensors could lead to a reduction in price competition between technologies or downstream products.

Moreover, a pooling arrangement that requires members to grant licenses to each other for current and future technology at minimal cost may reduce the incentives of its members to engage in research and development because members of the pool have to share their successful research and development and each of the members can free ride on the accomplishments of other pool members<sup>1400</sup>.

Pooling agreements typically warrant greater antitrust scrutiny than do cross-licensing agreements due to the collective pricing of pooled patents, greater possibilities for collusion, and generally a larger number of market participants. However, the potential pro-competitive benefits and anti-competitive effects of pools and cross licenses are scrutinized by the ATR and FTC under the rule of reason<sup>1401</sup>.

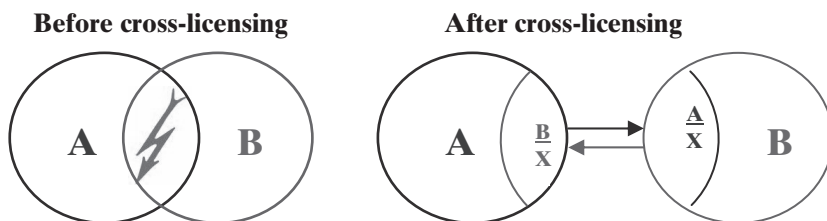
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1400 Sung-Hwan Kim, *Essays on Industrial Organization and Antitrust: Predation and Patent Pools* (2005) 57ff.

1401 Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in *1 Innovation Policy and the Economy* 119, 120 (Adam B. Jaffe et al. eds., 2000); Robert P. Merges, *Institutions for Intellectual Property Transactions: The Case of Patent Pools*, in *Expanding the Boundaries of Intellectual Property: Innovation Policy for the Knowledge Society* 123, 129-30, 132, 144 (Rochelle Cooper Dreyfuss et al. eds., 2000).

## a) Portfolio cross-licensing agreements

Portfolio cross-licenses<sup>1402</sup> are commonly **bilateral agreements** between two parties (A and B) seeking to avoid infringement litigation. They are licenses to broad portfolios of technology, generally related to a particular field of use:



Cross-licensing agreements **reduce transaction costs** and **give legal certainty** to the parties by allowing them to use the other party's patents. Some commentators note that cross-licenses usually grant the licensee the right to use the patented technology only in a limited field and for a fixed period of time.

Cross-licenses often cover both existing patents as well as those issued during the period of the agreement. Most cross licenses require royalty payments and are granted on a non-exclusive basis so that the parties retain the right to license their patents to others<sup>1403</sup>.

## i. Pro-competitive aspects of cross-licenses

Portfolio cross-licenses may be especially **useful in industries**, such as the semiconductor and computer industries that are characterized by large numbers of overlapping patent rights:

The most significant potential benefit of portfolio cross licensing is that it allows a firm **operating within a patent thicket to use each other's patented technology** without the risk of litigation, including the risk of facing an injunction that shuts down production. This elimination of risk, or "patent peace," can give firms the design freedom they need to improve current products or design new products without fear of infringement.

Some commentators agreed that portfolio cross licensing may **encourage long-term investments** in both manufacturing capacity and R&D because the parties to the portfolio cross license **do not fear "unforeseen, and unforeseeable, infringement actions."**

1402 See esp. Antitrust-IP Guidelines § 5.5.

1403 See e. g. Peter C. Grindley & David J. Teece, Managing Intellectual Capital: Licensing and Cross-Licensing in Semiconductors and Electronics, Cal. Mgmt. Rev., Winter 1997, at 8, 9; Sung-Hwan Kim, id.

Portfolio cross-licenses also can **reduce transaction costs** to licensors by allowing firms to license multiple patents at once<sup>1404</sup>.

A portfolio cross-licensing arrangement among multiple patent holders **may also mitigate the problem of stacking royalties**. Royalty stacking occurs when access to multiple patents is required to produce an end product, forcing the manufacturer's products to bear multiple patent burdens, usually in the form of multiple licensing fees. Royalty stacking can make production unprofitable and retard innovation. But when a rights holder enters into a portfolio cross-licensing arrangement, it may acquire access to all the blocking technologies required for production at a lower royalty rate than if each input were independently priced. A portfolio license can alleviate the “drag on innovation and commercialization of new technologies” that **royalty stacking** creates<sup>1405</sup>.

Some questioned whether patent thickets are much of a problem and suggested that, if a patent holder will not license a patent or tries to extract a royalty that is too high, other firms may respond by designing around the technology covered by the patent. They argued that when firms design around each other's intellectual property rights, they avoid royalties and may be able to offer newer, less expensive products to consumers. Others were sceptical that design-around attempts would be successful.

## ii. Anti-competitive aspects of cross-licenses

Portfolio cross-licenses with provisions that may facilitate the coordination of other activity (such as the setting of prices, dividing markets, or licensing to third parties) can **raise antitrust concerns**:

Portfolio cross licenses can be anti-competitive if the cross-licensing system amounts to the **creation of a common front** in which, in a form of **oligopolistic parallelism**, members hesitate to license their own patents to outsiders, thus protecting the group's position even at the expense of the individual firm's short-term interest<sup>1406</sup>.

A portfolio cross-licensing regime can pose a **barrier to entry** if existing relationships make it harder for “new firms to come in and overcome the patent thicket.” On the other side companies engaged in portfolio cross licensing are generally willing to license their portfolios to all interested parties – so that portfolio cross licensing does not create barriers to entry<sup>1407</sup>.

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1404 David J. Teece, *Managing Intellectual Capital: Organizational, Strategic, and Policy Dimensions* 139 (2002); Grindley & Teece, *Cross-Licensing in Semiconductors* at 9.

1405 See esp. Shapiro, *Navigating the Patent Thicket* at 123-24.

1406 John H. Barton, *Patents and Antitrust: A Rethinking in Light of Patent Breadth and Sequential Innovation*, 65 *Antitrust L.J.* 449, 464 (1997).

1407 Janusz A. Ordover, *A Patent System for Both Diffusion and Exclusion*, *J. Econ. Persp.*, Winter 1991, at 43, 47 n.4 and id, 111-12 (Shapiro).

## iii. Analysis

It is recognized that most of the non-exclusive cross-licensing agreements do not raise competition concerns. When the licensing of intellectual property allows firms to combine complementary factors of production, such licensing can be pro-competitive.

Accordingly, cross-licensing (and pooling) arrangements typically are **analyzed** pursuant to the **rule of reason**. Indeed, the case law generally establishes that both cross-licensing and patent-pooling agreements should be analyzed under the rule of reason because, although they have the potential to diminish competition in some circumstances, they also can be pro-competitive mechanisms for using technologies that require access to a large number of patents. The Agencies' general approach in analyzing a licensing restraint pursuant to the rule of reason is to inquire whether the restraint harms competition among entities that would have been actual or likely potential competitors in the absence of the license and whether the restraint is reasonably necessary to achieve pro-competitive benefits that outweigh those anti-competitive effects<sup>1408</sup>.

The ATR and FTC apply the same general antitrust principles to conduct involving intellectual property that they apply to conduct involving any other form of tangible or intangible property: In evaluating cross-licensing agreements, patent pools, or any other IP-related conduct, the Agencies therefore do not presume that market power is necessarily associated with an intellectual property right<sup>1409</sup>.

One may also not presume market power derives from a cross-licensing agreement (or patent pool) because there may be viable alternatives to participation in the licensing agreement that would preclude the assertion of market power. Antitrust concerns about exclusion from portfolio cross licenses are unlikely unless the parties to the portfolio cross licenses collectively possess market power.

However, agreements that are determined to be mechanisms to accomplish **naked price fixing** or **market division** are subject to challenge under the **per se rule**.

The Antitrust-IP Guidelines provide a **safe harbor** if the parties to a cross license

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1408 Antitrust-IP Guidelines §§ 3.1, 3.3, 3.4, 5.5; Steven C. Carlson, Patent Pools and the Antitrust Dilemma, 16 Yale J. on Reg. 359, 376-78, 383-84 (1999); Richard Gilbert & Carl Shapiro, Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties, 1997 Brookings Papers on Econ. Activity, Microeconomics 283, 325-26; see generally M. Howard Morse, Cross-Licensing and Patent Pools (Apr. 17, 2002 Hr'g R.) at 4-6; Joshua A. Newberg, Antitrust, Patent Pools and the Management of Uncertainty, 3 Atlantic L.J. 1, 6-21 (2000); Richard J. Gilbert, Antitrust for Patent Pools: A Century of Policy Evolution, 2004 Stan. Tech. L. Rev. 3, 6-87 (2004).

1409 Now also U.S. Supreme Court recently in *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 126 S. Ct. 1281, 1293 (2006).

- collectively account for no more than twenty percent of each relevant market significantly affected by the restraint and
- the restraint is not “facially anti-competitive”.

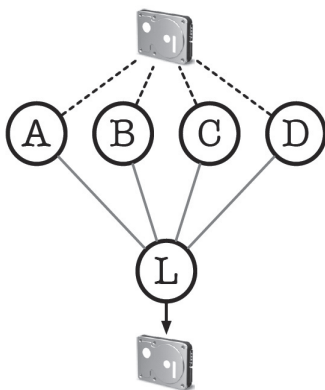
The ATR and FTC recognize that, if a cross-licensing agreement were to affect a technology market, market share data may be unavailable or may not accurately represent the parties’ competitive significance in the marketplace. In such cases it will be considered whether there are four or more independently controlled technologies in addition to the technologies controlled by the parties to the licensing arrangement that may be substitutable for the licensed technology at a comparable cost to the user<sup>1410</sup>.

#### b) Patent pools – general introduction

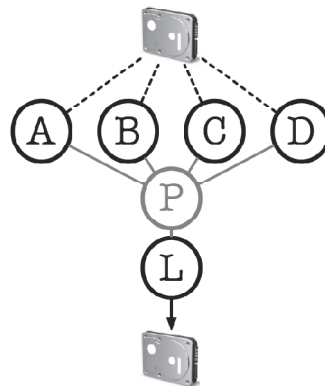
In part because of concern about antitrust liability, **patent pools** have been used only sporadically throughout the past century<sup>1411</sup>. But when they have been utilized, they frequently **have resolved potential bottlenecks**<sup>1412</sup>.

Following the below shown **mechanism of how patent pools work**, the licensee (L) has to negotiate instead of four license-agreements, only one license-agreement with the pool and hence reduce transaction costs and increase legal certainty:

#### Before the pooling-agreement



#### After the pooling-agreement (P)



Grafik: Hanno F. Kaiser

1410 Antitrust-IP Guidelines § 4.3.

1411 Robert P. Merges, Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations, 84 CALIF. L. REV. 1293, 1355 (1996). For a discussion of the history and antitrust treatment of patent pools, see Richard J. Gilbert, Patent Pools: 100 Years of Law and Economic Solitude 3-27 (May 5, 2002).

1412 See Steven C. Carlson, Note, Patent Pools and the Antitrust Dilemma, 16 YALE J. ON REG. 359, 373 (1999).

In 1856, the Sewing Machine Combination formed one of the **first patent pools** consisting of **sewing machine patents**<sup>1413</sup>. In 1917, as a result of a recommendation of a committee formed by the Assistant Secretary of the Navy (Franklin D. Roosevelt), an **aircraft patent pool** was privately formed encompassing almost all aircraft manufacturers in the United States<sup>1414</sup>. The creation of the Manufacturer's Aircraft Association was crucial to the U.S. government because the two major patent holders, the Wright Company and the Curtis Company, had effectively blocked the building of any new airplanes, which were desperately needed as the United States was entering World War I.

In 1924, an organization first-named the Associated Radio Manufacturers, and later the Radio Corporation of America, merged the radio interests of American Marconi, General Electric, American Telephone and Telegraph (AT&T) and Westinghouse, leading to the establishment of **standardization of radio parts**, airway's frequency locations and television transmission standards<sup>1415</sup>.

In the last decade, however, patent pools were formed and scrutinized by the antitrust authorities:

- The Trustees of Columbia University, Fujitsu Limited, General Instrument Corp., Lucent Technologies Inc., Matsushita Electric Industrial Co., Ltd., Mitsubishi Electric Corp., Philips Electronics N.V. (Philips), Scientific Atlanta, Inc. and Sony Corp. (Sony) formed in 1997 a patent pool to jointly share royalties from patents that are essential to comply with the **MPEG\_2** compression technology standard<sup>1416</sup>.
- In 1998, Sony, Philips and Pioneer formed a patent pool for inventions that are essential to comply with certain **DVD-Video and DVD-ROM standard** specifications<sup>1417</sup>.

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1413 See Robert P. Merges, *Institutions For Intellectual Property Transactions: The Case for Patent Pools* (August 1999).

1414 Harry T. Dykman, *Patent Licensing within The Manufacturer's Aircraft Association (MAA)*, 46 J. PAT. OFF. SOC'Y 646, 648 (1964).

1415 *The Radio Manufacturers Association* (August 5, 1998).

1416 Letter from Joel I. Klein, Assistant Attorney General, Department of Justice, Antitrust Division, to Gerrard R. Beeney, Esq. (June 26, 1997) (noting that *United States v. Line Materials*, 333 U.S. 287, 313 n.24 (1948) states that the term "patent pool" is not a term of art.). This technology has been applied to high definition television (HDTV), Digital Video Broadcasting (DVB), direct broadcast by satellite (DBS), digital cable television systems, multichannel-multipoint distribution services (MMDS), personal computer video, digital versatile discs (DVD), and interactive media. See Statement of Baryn S. Futa, *Hearings on Competition and IP Law 2* (Apr. 17, 2002).

1417 See Letter from Joel I. Klein, Assistant Attorney General, Department of Justice, Antitrust Division, to Gerrard R. Beeney, Esq. (December 16, 1998). This pool is relating to DVD technology involved Toshiba and Time Warner and covered products manufactured in compliance with the DVD-ROM and DVD-Video formats.

- Another patent pool was formed in 1999 by Toshiba Corporation, Hitachi, Ltd., Matsushita Electric Industrial Co., Ltd., Mitsubishi Electric Corporation, Time Warner Inc. and Victor Company of Japan, Ltd. for products manufactured in compliance with the **DVD-ROM and DVD-Video formats**<sup>1418</sup>.
  - Finally, a patent pool involving lasers used in photorefractive keratectomy (“**PRK**”)<sup>1419</sup>, a form of eye surgery used to correct vision disorders, was established<sup>1420</sup>.
- i. Pro competitive aspects of patent pools in general

Patent pools generally<sup>1421</sup> are created when a group of patent holders each decides to license its respective patents to each other and to third parties collectively. They often are formed when multiple patented technologies are needed to produce a standardized product.

A patent pool is the most **cost effective** and efficient way of collecting and distributing royalties for patents that are essential to an industry standard<sup>1422</sup>. The high cost of R&D and the increasing need in a global competitive economy to reduce development costs and reduce risks that development initiatives that lead to marketable products has led to

- product standardization as efforts are made to avoid format wars and
- joint development of single products as multiple industry participants attempt to share the risk and costs of new product development.

Moreover, patent-pooling agreements usually last for the life cycle of the technology or standard rather than for a fixed period of time and patent pools help to mitigate the “hold up” and “hold out” problems that can sometimes stymie industry efforts to make a product that conforms to an industry standard<sup>1423</sup>:

**Hold up** can arise when firms make relationship-specific investments, after which they may face efforts by others to recontract for more of the surplus. The problem derives from the inability of parties to enter into complete (and costlessly enforced) contracts.

A **hold out** can arise when buyers need multiple complementary rights and sellers arrive in a sequenced fashion. In such a situation, players may strategically delay the start of a negotiation so as to garner the greatest

1418 Letter from Joel I. Klein, Assistant Attorney General, Department of Justice, Antitrust Division, to Carey R. Ramos, Esq. (June 10, 1999).

1419 In re Summit Technology, Inc. and VISX, Inc., FTC Dkt. No. 9286.

1420 These patent pools are described in detail below.

1421 See Sung-Hwan Kim, Essays on industrial organization and antitrust: Predation and patent pools (2005), 57ff: He is presenting a theoretical analysis of patent pools.

1422 So James J. Kulbaski, Comments on Patent Pools and Standards for Federal Trade Commission Hearings Regarding Competition & Intellectual Property (Apr. 17, 2002 Hr’g R.) at 1.

1423 Apr. 17 Tr. at 176-77 (Beeney).

surplus by becoming the last bidding seller. As a result, the total burden of all royalty payments may be higher than if a single royalty is demanded by a monopolist of all patents essential to the production of a final product<sup>1424</sup>. Patent pools can therefore reduce transaction costs for licensees in several ways:

- obtaining a pool license may be less costly than negotiating separate licenses with each patent owner,
- licensing pooled patents on a group basis – patent pool members can offer “one-stop shopping” to firms seeking to manufacture products using those patents,
- eliminating infringement litigation,
- usage of an independent expert to determine which patents to include in the pool, reassure licensees that the patents being licensed are essential to manufacturing products that comply with the standard.

Additionally, patent pools can **institutionalize the exchange of non-patented** technical information. For these reasons patent pools have become critically important mechanisms for enabling widespread use of new technologies<sup>1425</sup>.

#### ii. Anti-competitive aspects of patent pools in general

Pools composed of **pure substitute patents** (patents covering technologies that compete with each other and that licensees can choose among), are more **likely to harm** social welfare than are pools of complementary patents (patents covering separate aspects of a given technology that do not compete with each other)<sup>1426</sup>.

**Pools composed only of complementary patents tend to increase efficiencies** and lower prices to consumers. However, there are other areas that might raise competitive concern, including whether

- patents included in the pool were essential and valid,
- patent pool members retained the ability to license their patents outside of the pool,
- grantback requirements reduce incentives to innovate,

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1424 See generally, Guido Calabresi & A. Douglas Melamed, Property Rules, Liability Rules, and Inalienability: One View of the Cathedral, 85 Harv. L. Rev. 1089, 1106-07 (1972); Robert P. Merges, Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations, 84 Cal. L. Rev. 1293, 1298 n.9 (1996); Shapiro, Navigating the Patent Thicket at 121, 123-24; Joseph J. Spengler, Vertical Integration and Antitrust Policy, 58 J. Pol. Econ. 347, 347-52 (1950); Augustin Cournot, *Researches into the Mathematical Principles of the Theory of Wealth* 99-104 (1929).

1425 Carlson, 16 Yale J. on Reg. at 379; Merges, *The Case of Patent Pools* at 136ff.

1426 See in detail: Sung-Hwan Kim, *Essays on Industrial Organization and Antitrust: Predation and Patent Pools* (2005) 57ff.

- access to competitively sensitive, proprietary business information should be limited,
  - antitrust authorities should review pool royalty rates and
  - pools that refuse to offer licenses to subsets of the pool's patents cause competitive harm<sup>1427</sup>.
- c) Antitrust-analysis to patent pool proposals

In the last years the ATR and the FTC have provided substantial guidance regarding the antitrust analysis used to evaluate the potential harms associated with patent pools and to a lesser extent cross-licensing agreements. As explained in the Antitrust-IP Guidelines the Agencies stated two primary concerns when analyzing the likely effects on competition of a potential or actual patent pool:

- **Horizontal coordination among the pool's licensors** could lead to a reduction in price competition among downstream products. In particular, a **pool that includes patents for substitute technologies** could lead to increased prices in the final goods market due to the absence of competition among those substitute technologies. In addition, participants in the pool might be able to use it to collude, for example, by exchanging competitively sensitive information, such as pricing, marketing, or R&D information through the mechanism of the pool.
- Combining patent rights in a pool **could discourage R&D**, new product development, and cost-reducing process innovations. Licensors could be discouraged from making investments in innovation if a pooling arrangement requires members to grant licenses to each other at minimal cost because members of the pool have to share their successful research and development and each of the members can free ride on the accomplishments of other pool members. Licensees could be discouraged from innovating if the licensors do not retain the right to license their patents independently or if licensees are not adequately rewarded for innovations that they grant back to the pool.

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1427 *Matsushita Elec. Indus. Co. v. Cinram Int'l, Inc.*, 299 F. Supp. 2d 370 (D. Del. 2004); *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1 (1979) (copyright pooling arrangement); *United States v. Singer Mfg. Co.*, 374 U.S. 174 (1963); *United States v. New Wrinkle, Inc.*, 342 U.S. 371 (1952); *United States v. Line Material Co.*, 333 U.S. 287 (1948); *United States v. U.S. Gypsum Co.*, 333 U.S. 364 (1948); *Hartford-Empire Co. v. United States*, 323 U.S. 386 (1945); *Standard Oil Co. v. United States*, 283 U.S. 163 (1931); *Standard Sanitary Mfg. Co. v. United States*, 226 U.S. 20 (1912); *Line Material Co.*, 333 U.S. at 313 n.24; *Bement v. Nat'l Harrow Co.*, 186 U.S. 70 (1902); *Carpet Seaming Tape Licensing Corp. v. Best Seam Inc.*, 616 F.2d 1133 (9th Cir. 1980); *Kobe, Inc. v. Dempsey Pump Co.*, 198 F.2d 416 (10th Cir. 1952); *Baker-Cammack Hosiery Mills, Inc. v. Davis Co.*, 181 F.2d 550 (4th Cir. 1950); *Cutter Labs., Inc. v. Lyophile-Cryochem Corp.*, 179 F.2d 80 (9th Cir. 1949); *King v. Anthony Pools, Inc.*, 202 F. Supp. 426 (S.D. Cal. 1962); *Hartford-Empire Co.*, 323 U.S. at 392, 413.