

# **Obviousness Goes Back To The Future**

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## Pre-KSR Supreme Court Cases

- Hotchkiss v. Greenwood (1851)
- Great A. & P. Tea Co. v. Supermarket Equip. Corp. (1950)
- Graham v. John Deere Co. (1966)
- U.S. v. Adams (1966)
- Anderson's-Black Rock v. Pavement Salvage Co. (1969)
- Sakraida v. Ag Pro, Inc. (1976)

## KSR Int'l Co. v. Teleflex, Inc. (2007)

## Post-KSR Federal Circuit Cases

- Leapfrog Enters., Inc. v. Fisher-Price, Inc.
- In re ICON Health and Fitness, Inc.
- Takeda Chem. Indust. v. Alphapharm Pty.
- Aventis Pharma. Deutschland GmbH v. Lupin, Ltd.
- PharmaStem Therapeutics, Inc. v. ViaCell Inc.
- Daiichi Sankyo Co. v. Apotex, Inc.

## ***Hotchkiss v. Greenwood (1851)***

- Clay and porcelain door knobs.
- “[F]or unless **more ingenuity and skill** in applying the old method of fastening the shank and the knob were required in the application of it to the clay or porcelain knob than were possessed by an **ordinary mechanic** acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention. In other words, the improvement is the work of the skilful mechanic, not that of the inventor.”
- “The improvement consists in the superiority of the material, and which is not new, over that previously employed in making the knob. But this, of itself, can never be the subject of a patent. No one will pretend that a machine, made, in whole or in part, of materials better adapted to the purpose for which it is used than the materials of which the old one is constructed, and for that reason better and cheaper, can be distinguished from the old one . . .”

# ***Great A. & P. Tea Co. v. Supermarket Equip. Corp. (1950)***

- Cashier's counter equipped with a three-sided frame which moved groceries deposited within it by a customer to the cashier.
- “The mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation than that theretofore performed or produced by them, is not patentability invention.”
- “The conjunction or concert of known elements must contribute something; only when the whole in some way exceeds the sum of its parts is the accumulation of old devices patentable. Elements may, of course, especially in chemistry or electronics, take on some new quality or function from being brought into concert, but this is not a usual result of uniting elements old in mechanics.”
- “Courts should scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements. The function of a patent is to add to the sum of useful knowledge. . . . A patent for combination which only unites old elements with no change in their respective functions . . . obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men.”

## ***Graham v. John Deere Co. (1966)***

- Plow with spring clamp used to lessen damage caused by obstructions.
- “[T]he § 103 condition . . . lends itself to **several basic factual inquiries**. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.”
- Secondary considerations “may also serve to ‘guard against slipping into the use of hindsight’ and to resist the temptations to read into the prior art the teachings of the invention in issue.”
- “all of the elements in the ‘798 patent are present in the Glencoe structure. Furthermore, even though the position of the shank and hinge plate appears reversed in Glencoe, the mechanical operation is identical.”

## ***U.S. v. Adams (1966)***

- A “wet battery” containing water rather than acid and electrodes of magnesium and cuprous chloride rather than zinc and silver chloride.
- “Despite the fact that each of the elements of the Adams battery was well known in the prior art, to combine them as did Adams required that a person reasonably skilled in the prior art must ignore that (1) batteries which continued to operate on an open circuit and which heated in normal use were not practical; and (2) water-activated batteries were successful only when combined with electrolytes detrimental to the use of magnesium. These **long-accepted factors**, when taken together, would, we believe, **deter any investigation into such a combination** as is used by Adams. . . . We do say, however, that known disadvantages in old devices which would naturally discourage the search for new inventions may be taken into account in determining obviousness.”
- “We have seen that at the time Adams perfected his invention noted **experts expressed disbelief** in it. Several of the same experts **subsequently recognized the significance** of the Adams invention, some even patenting improvements on the same system. Furthermore, in a crowded art replete with a century and a half of advancement, the Patent Office found not one reference to cite against the Adams application.”

## ***Anderson's-Black Rock, Inc. v. Pavement Salvage Co. (1969)***

- Asphalt paving machine.
- “The combination of putting the burner together with the other elements in one machine, though perhaps a matter of great convenience, did not produce a ‘new or different function,’ within the test of validity of combination patents.”

## ***Sakraida v. Ag Pro, Inc. (1976)***

- A water flush system to clean a barn floor.
- “[T]his patent simply arranges old elements with each performing the same function it had been known to perform, although perhaps producing a more striking result than in previous combinations. Such combinations are not patentable under standards appropriate for a combination patent.”

## ***KSR Int'l Co. v. Teleflex, Inc. (2007)***

- An adjustable gas pedal for a car.
- District court granted summary judgment of invalidity.
- The Federal Circuit reversed because there was no explicit teaching, suggestion, or motivation (“TSM”) that would lead POSITA to combine prior art in manner claimed in patent.
- SCt reversed

## ***KSR Int'l Co. v. Teleflex, Inc. (2007)***

- Application of the TSM test as a “rigid and mandatory formula[] ... is incompatible with our precedent.”
- “our cases have set forth an expansive and flexible approach inconsistent with the way the Court of Appeals applied its TSM test here. ... the principles laid down in Graham reaffirmed the ‘functional approach’ of Hotchkiss. To this end, Graham set forth a broad inquiry and invited courts, where appropriate, to look at any secondary consideration that would prove instructive.”

## ***KSR Int’l Co. v. Teleflex, Inc. (2007)***

- “Neither the enactment of § 103 nor the analysis in *Graham* disturbed this Court’s earlier instructions concerning the need for caution in granting a patent based on the combination of elements found in the prior art. For over a half century, the Court has held that a ‘patent for a combination which only unites old elements with no change in their respective functions... obviously withdraws what is already known into the field of its monopoly and diminishes the resources available to skillful men.’ This is a principal reason for declining to allow patents for what is obvious. The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”

## ***KSR Int'l Co. v. Teleflex, Inc. (2007)***

- “The principles underlying these cases are instructive when the question is whether a patent claiming the combination of elements of prior art is obvious. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* and *Anderson’s-Black Rock* are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.”

## ***KSR Int'l Co. v. Teleflex, Inc. (2007)***

- “Following these principles may be more difficult in other cases than it is here because the claimed subject matter may involve more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement. Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit. As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of this challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”

## ***KSR Int'l Co. v. Teleflex, Inc. (2007)***

- TSM test “**captured a helpful insight.**”
- “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.”
- “There is no necessary inconsistency between the idea underlying the TSM test and the Graham analysis. But when a court transforms the general principle into a rigid rule that limits the obviousness inquiry, as the Court of Appeals did here, it errs.”

## ***KSR Int'l Co. v. Teleflex, Inc. (2007)***

- Rigid preventative rules that deny factfinders recourse to **common sense**, however are neither necessary under our case law nor consistent with it.”
- Error to assume “that a person of ordinary skill attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem ... Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. ... A person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 1742.

## ***KSR Int'l Co. v. Teleflex, Inc. (2007)***

- “When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has a good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation, but of ordinary skill and common sense. In that instance the fact that a combination was **obvious to try** might show that it was obvious under § 103.”

## ***Leapfrog Enters., Inc. v. Fisher-Price, Inc.***

- interactive learning device to help children learn to read
- The prior art was: (1) an electro-mechanical learning toy with a phonograph record that plays sounds associated with puzzle pieces when the puzzle pieces are depressed and (2) an electronic learning toy that allows for the insertion of a book into a device; when a user presses certain areas of the book's pages, the sounds of the letters in the words are played together.; did not include a reader that allowed the device to automatically detect the inserted book.
- Held the patented combination is merely the adaptation of an old idea using newer technology that is commonly available and understood in the art.
- “Applying modern electronics to older mechanical devices has been commonplace in recent years.”

## ***In re ICON Health and Fitness, Inc.***

- Folding treadmill with spring to assist in stably remaining said tread base.
- “A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor’s endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his problem.”
- Because the spring in Teague is directed to the same purpose of the spring in the claimed invention, the court found a person of ordinary skill in the art would naturally look to Damark and Teague and find a reason to combine them.

## ***Takeda Chem. Indus. v. Alphapharm Pty.***

- Chemical compound/Type 2 diabetes drug.
- “[N]ormally a prima facie case of obviousness is based upon structural similarity , *i.e.*, an established structural relationship between a prior art compound and the claimed compound...because close or established structural relationships may provide the requisite motivation or suggestion to modify know compounds to obtain new compounds.”
- “[I]n order to find a prima facie case of unpatentability in such instances, a showing that the prior art would have suggested making the specific molecular modifications necessary to achieve the claimed invention was also required.”

## ***Takeda Chem. Indus. v. Alphapharm Pty.***

- KSR rejected rigid application of TSM test, but “acknowledged the importance of identifying a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does in an obviousness determination.”
- “[I]n case[s] involving **new chemical compounds**, it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed invention.”
- Affirmed holding that patent was not invalid because prior art disclosed “hundreds of millions” of compounds and taught away from selection of “compound b” as the lead compound

## ***Aventis Pharma. Deutschland v. Lupin***

- Chemical compound: the 5(S) stereoisomer of ramipril “in a formulation substantially free of other isomers”.
- “it remains necessary to show some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness, but such reasoning need not seek out precise teachings directed to the specific subject matter of the challenged claims. Requiring an explicit teaching to purify the 5(S) stereoisomer from a mixture in which it is the active ingredient is precisely the sort rigid application of the TSM test that was criticized in *KSR*.”
- “In chemical arts, we have long held that **structural similarity** between claimed and prior art subject matter, proved by combining references or otherwise, where the **prior art gives reason or motivation to make the claimed compositions**, creates a prima facie case of obviousness.”

## ***Aventis Pharma. Deutschland v. Lupin***

- “The ‘reason or motivation’ need not be an explicit teaching  
... it is sufficient to show that the claimed and prior art compounds possess a sufficiently close relationship ... to create an expectation, in light of the totality of the prior art, that the new compound will have ‘similar properties’ to the old.”
- “The analysis is similar where, as here, a claimed composition is a purified form of a mixture that existed in the prior art. Such a purified compound is not always prima facie obvious over the mixture; for example, it may not be known that the purified compound is present in or an active ingredient of the mixture, or the state of the art may be such that discovering how to perform the purification is an invention of patentable weight in itself. However, if it is known that some desirable property of a mixture derives in whole or in part from a particular one of its components, or if the prior art would provide a person of ordinary skill in the art with reason to believe that this is so, the purified compound is prima facie obvious over the mixture even without an explicit teaching that the ingredient should be concentrated or purified.”

## ***Aventis Pharma. Deutschland v. Lupin***

- “Ordinarily, one expects a concentrated or purified ingredient to retain the same properties it exhibited in a mixture, and for those properties to be amplified when the ingredient is concentrated or purified; isolation of interesting compounds is a mainstay of the chemist’s art. If it is known how to perform such an isolation, doing so is likely the product not of innovation but of ordinary skill and common sense.”
- Reversed holding that the patent was not invalid

# ***PharmaStem Therapeutics v. ViaCell, Inc.***

- Cryopreservation of umbilical cord blood and infusion of cord blood into an adult individual whose hematopoietic stem cells have been destroyed.
- “[T]he burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had **reason to attempt to make the composition or device**, or carry out the claimed process, and would have had a **reasonable expectation of success** in doing so.”
- “While the inventors may have proved conclusively what was strongly suspected before—that umbilical cord blood is capable of hematopoietic reconstitution—and while their work may have significantly advanced the state of science . . . by eliminating doubt[,] . . . the mouse experiments and the conclusions drawn from them were not inventive in nature. Instead, the inventors merely used routine research methods to prove what was already believed to be the case. Scientific confirmation of what was already believed to be true may be a valuable contribution, but it does not give rise to a patentable invention.”
- “[O]bviousness does not require absolute predictability of success.”
- Reversed jury verdict of non-obviousness.

## ***Daichi Sankyo Co. v. Apotex, Inc.***

- Method for treating bacterial ear infections by topically administering the antibiotic ofloxacin into the ear.
- “Factors that may be considered in determining level of ordinary skill in the art include:
  - (1) the educational level of the inventor;
  - (2) type of problems encountered in the art;
  - (3) prior art solutions to those problems;
  - (4) rapidity with which innovations are made;
  - (5) sophistication of the technology; and
  - (6) educational level of active workers in the field.”
- Obvious to use ofloxacin, a gyrase inhibitor like ciprofloxacin, in ear drops to topically treat ear infections.

## ***Examination Guidelines for Determining Obviousness in View of KSR***

- Basic factual inquiry is Graham factors
- “The key supporting any rejection under [section 103] is the clear articulation of the reason(s) why the claimed invention would have been obvious.”

# ***Examination Guidelines for Determining Obviousness in View of KSR***

- *Rationales for finding of obviousness:*

Combining prior elements according to known methods to yield predictable results

Simple substitution of one known element for another to obtain predictable results

Use of known technique to improve similar device in the same way

Applying known technique to a device ready for improvement to yield predictable result

Obvious to try

Known work in one field prompts variations of it for use in same field or different field based on design incentives or other market forces

Some teaching, suggestion, or motivation in the prior art

# Conclusion

- KSR restates SCt law of obviousness of “combination patents” and introduces concepts of ordinary creativity and common sense
- Fed. Cir. applying new “common sense” standard to mechanical inventions
- Fed. Cir. applying a TSM-like test to chemical inventions
- PTO Examiner Guidelines offer some guidance

## Thank you

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