

Patent Law

Prof. Roger Ford

October 16, 2017

Class 14 – Nonobviousness: persons having ordinary skill in the art; available prior art; secondary considerations

Recap

Recap

→ Obviousness after *KSR*

Announcements

Announcements

- All the midterms have been turned in
- The obviousness exercise has been posted on the website and will be due on *Monday, October 23* at 11:59 pm

Today's agenda

Today's agenda

- Level of skill in the art
- Available prior art and the analogous-art doctrine
- Scope and timing of § 103 prior art
- Secondary considerations of nonobviousness

**Level of skill
in the art**

(Post-AIA) 35 U.S.C. § 103 — Conditions for patentability; non-obvious subject matter

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that **the claimed invention as a whole would have been obvious** before the effective filing date of the claimed invention **to a person having ordinary skill in the art to which the claimed invention pertains**. Patentability shall not be negated by the manner in which the invention was made.

Level of skill in the art

- Why should we care about whether the invention is obvious to a people having ordinary skill in the art?
 - Note: We don't care for § 102!
- If it's obvious to anyone, shouldn't it be obvious as a matter of law?

Level of skill in the art

- The simple answer: The statute says so
- The subtler answer: It's a tradeoff
 - If an invention is obvious to someone, but that person isn't of ordinary skill in the art, the likelihood that the public benefits from that obviousness is lower

Level of skill in the art

- So how do we determine the appropriate level of skill in the art?
 - *Daiichi*

Daiichi

- Tech: Method of treating ear infections with ofloxacin drops
- Prior art: Method of treating ear infections with ciprofloxacin drops
 - Ofloxacin and ciprofloxacin are in the same antibiotic family
 - Both have long been used for other antibiotic purposes

Daiichi

- District court: Level of ordinary skill in the art is a pediatrician or general-practice physician treating ear infections
- Federal Circuit: Actually, it's a researcher doing drug development
 - Why?

Daiichi

→ Factors:

1. 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
6. educational level of active workers in the field

Daiichi

→ Factors:

1. 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
6. educational level of active workers in the field

Daiichi

- Why should we care about the inventor's educational level?

Daiichi

- Is the relevant art making the invention or using it?

Stryker

- Tech: Hospital bed with an inflatable mattress that uses a computer network to control various bed functions

Stryker

- “The hypothetical ordinary skilled worker ... is a person with at least a Bachelor’s degree in Electrical Engineering who worked in the multidisciplinary field of medical devices and communication networks. This hypothetical person was familiar with CAN networks and knew that the CAN could be successfully adapted to the challenges posed by medical devices.”

Daiichi

→ So three basic elements:

- Education
- Experience with the art
- Knowledge of the art

Stryker

→ Do these map onto the six factors?

1. 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
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Stryker

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1. educational level of the inventor
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Available
prior art

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Available prior art

- The philosophical question: How do we know if the invention would have been obvious?
- *Graham*: We just ask if it's obvious
 - Fed. Cir. pre-*KSR*: TSM test
 - *KSR*: Look for some reason to combine, or predictable results from a combination

Available prior art

- But that leaves a question: Why do we assume someone of ordinary skill in the art would know about all the prior art?

Available prior art

- The classic answer: *In re Winslow*
 - Fairly simple mechanical combination of two prior-art elements
 - Inventor's argument: Someone of ordinary skill in the art wouldn't know about those elements

“We think the proper way to apply the 103 obviousness test to a case like this is to **first picture the inventor as working in his shop with the prior art references — which he is presumed to know — hanging on the walls around him.** One then notes that what applicant Winslow built here he admits is basically a Gerbe bag holder having air-blast bag opening to which he has added two bag retaining pins. If there were any bag holding problem in the Gerbe machine when plastic bags were used, their flaps being gripped only by spring pressure between the top and bottom plates, **Winslow would have said to himself, ‘Now what can I do to hold them more securely?’ Looking around the walls, he would see Hellman’s envelopes with holes in their flaps hung on a rod.** He would then say to himself, ‘Ha! I can punch holes in my bags and put a little rod (pin) through the holes. That will hold them! After filling the bags, I’ll pull them off the pins as does Hellman. Scoring the flap should make tearing easier.”

In re Winslow, C.C.P.A. 1966 (Rich, J.)

Available prior art

- Novelty: all prior art is relevant
- Obviousness: only some prior art is relevant
 - Why?

Available prior art

- Two kinds of relevant prior art
 - Prior art that's from the same field of endeavor, regardless of the problem it exists to solve
 - Prior art that is reasonably pertinent to the specific problem the inventor is trying to solve, regardless of the field
- The problem: how broadly to define the "problem" the inventor is trying to solve

Icon Health & Fitness

- Tech: Folding treadmill

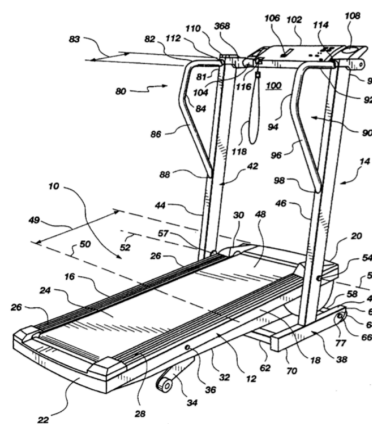


Fig. 1

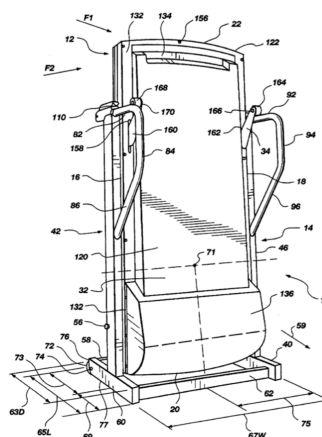


Fig. 2

US005676624A

United States Patent [19] Patent Number: **5,676,624**
Watterson et al. [45] Date of Patent: **Oct. 14, 1997**

[54] **PORTABLE REORIENTING TREADMILL**
 [75] Inventors: **Scott R. Watterson; William T. Dalebout**, both of Logan; **Rodney L. Hammer**, Lewiston, all of Utah
 [73] Assignee: **ICON Health & Fitness, Inc.**, Logan, Utah
 [21] Appl. No.: **594,271**
 [22] Filed: **Jan. 30, 1996**
 [51] Int. Cl.⁶ **A63B 22/02**
 [52] U.S. Cl. **482/54**
 [58] Field of Search **482/54**

[56] **References Cited**
U.S. PATENT DOCUMENTS
 D. 207,541 5/1967 Hesse
 D. 211,801 7/1968 Quinlan
 321,388 6/1885 Raeburn
 663,486 12/1900 Borne
 881,521 3/1906 Wilson
 1,020,777 3/1912 Peterson
 1,715,870 6/1929 Spain
 1,850,530 3/1932 Brown
 1,902,694 3/1933 Edwards
 1,928,089 9/1933 Bickman
 1,973,945 9/1934 Chavin et al.
 2,855,200 10/1958 Bickman
 3,127,171 3/1964 Noland et al.
 3,378,259 4/1966 Kappelstein
 3,586,322 6/1971 Kvemland
 3,589,715 6/1971 Mark et al.
 3,614,097 10/1971 Bickman
 3,642,279 2/1972 Cutler
 3,659,845 5/1972 Quinlan
 3,731,917 5/1973 Toward
 3,741,538 6/1973 Lewis et al.
 3,874,657 6/1975 Niebojewski
 3,918,710 11/1975 Niebojewski
 4,026,545 5/1977 Schonberger
 4,066,257 1/1978 Moller
 4,248,476 2/1981 Phelps
 4,300,761 1/1981 Howard
 4,422,635 12/1983 Herod et al.
 4,625,962 12/1986 Sont

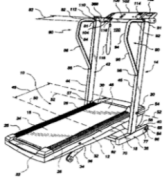
FOREIGN PATENT DOCUMENTS
 8346 8/1988 Germany
 56-150562 4/1980 Japan
 56-56358 5/1981 Japan
 119148 10/1969 United Kingdom
 1,326,263 8/1973 United Kingdom
 2,120,560 12/1983 United Kingdom

OTHER PUBLICATIONS
 Copy of brochure entitled "Technology for Total Fitness Genesis 3000", 7 pages—copyright 1985.
 Cover and selected pages from the Taiwan Buyer's Guide—1993.
 Cover page, pp. 2 and 81 of brochure entitled "Taiwan Sports Goods" (Buyers' Guide '95).
 Copy of brochure entitled "Technology for Total Fitness Genesis 1000", 6 pages—copyright 1985.
 Copy of brochure entitled "Technology for Total Fitness Genesis 2000", 6 pages—copyright 1985.

Primary Examiner—Lynne A. Reichard
 Attorney, Agent, or Firm—Trank, Reitz & Rossa

[57] **ABSTRACT**
 The treadmill has a tread base that is rotatably attached to and between a left upright and a right upright. The tread base is rotatable between a first position for performing exercises and an upright or storage position. A latching structure is provided to latch the tread base to the support structure. The treadmill also includes inclination structure for inclining the tread relative to the support surface when in the first position. The treadmill also includes rigid handles and in one configuration movable handles. The tread base also has a rigid underframe or pan to fully enclose the underside of the tread base. A lift assist gas cylinder is also interconnected between the tread base and the feet attached to the uprights.

13 Claims, 15 Drawing Sheets



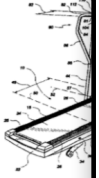
U.S. Patent No. 5,676,624

→ "Portable reorienting treadmill"

United States Patent [19] Patent Number: **5,676,624**
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[54] **PORTABLE REORIENTING TREADMILL**
 [75] Inventors: **Scott R. Watterson; William T. Dalebout**, both of Logan; **Rodney L. Hammer**, Lewiston, all of Utah
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What is claimed is:
1. A treadmill comprising:
 support structure having feet means for stably positioning on a support surface to be free standing and having upright structure extending upwardly from said feet means;
 a tread base having a frame that includes a front, a rear, a left side, a right side and an endless belt positioned between said left side and said right side, said frame being connected to said support structure to be moveable about an axis of rotation spaced from said front toward said rear between a first position in which said endless belt is positioned for operation by a user positioned thereon and a second position in which said rear of said frame is positioned toward said support structure;
 handle means associated with said support structure positioned for grasping by a user for moving said support structure with said tread base in said second position between a use position in which said support structure has said feet means positioned on said support surface for stably positioning said support structure on a support surface and a moving position in which said support structure is rotatably displaced from said use position;
 roller means adapted to said feet means for engagement with said support surface when said support structure is reoriented to said moving position for movement of said support structure by the user on said support surface; and
 means for stably retaining said tread base in said second position relative to said upright structure with said tread base in said second position.

Patent 676,624 Portable reorienting treadmill

Icon Health & Fitness

- Teague prior art: A bed that folds up into a cabinet with the assistance of a dual-action spring

Icon Health & Fitness

- So would Teague be on the wall in the hypothetical artisan's workshop?

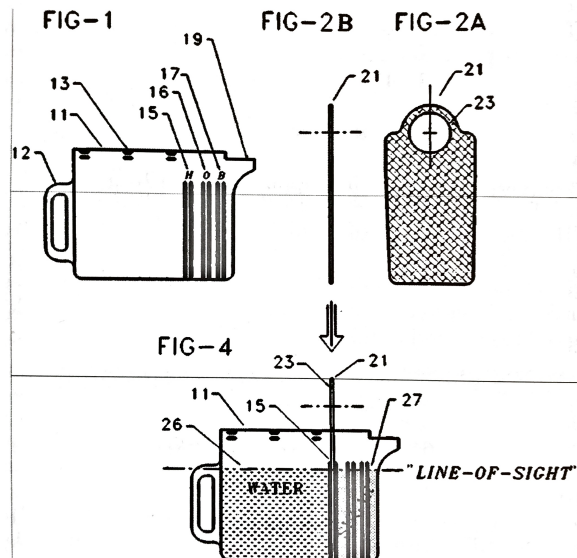
Icon Health & Fitness

→ So would Teague be on the wall in the hypothetical artisan's workshop?

- Court: Absolutely
- "Nothing about Icon's folding mechanism requires any particular focus on treadmills; it generally addresses problems of supporting the weight of such a mechanism and providing a stable resting position."

Klein

→ Tech:
Container to mix specific ratios of sugar and water to make nectar for specific birds



Klein

- So what was the problem Klein was trying to solve?
 - Klein: “multiple ratio mixing” of liquids
 - Government: “compartment separation”

Klein

- Would someone of ordinary skill in the art, shown the cited prior art, find the invention obvious?

Klein

- Would someone of ordinary skill in the art, shown the cited prior art, find the invention obvious?
- Maybe!
 - It shows the slot-separation aspect of the invention
 - But it might not be predicted to succeed, if liquid would flow around the dividers

Klein

- So this case depends on the level of generality at which we define the problem the inventor seeks to solve
- Broader problem: More prior art
 - Narrower problem: Less prior art

In re Clay

- Another good example
- Patent: method of filling empty space in an oil tank with a gel



In re Clay

- Prior art: method of filling empty space with air-filled bladders
- Prior art: method of filling underground cavities in oil-producing areas with a gel

In re Clay

- Court: underground gel is not analogous prior art
 - Different fields: exploration versus storage
 - Different problem: streamlining underground formations to cause oil to flow more easily, not filling empty space in storage

Available prior art

- These cases are, generally, hard to predict
 - *Wang Laboratories v. Toshiba*: Prior-art memory module used in large machinery was not analogous art for memory module for personal computers

Available prior art

- These cases are, generally, hard to predict
- *George J. Meyer Mfg. Co. v. San Marino Electronic Corp.*: Circuit for tracking stars and missiles was analogous art for circuit designed to inspect bottles to detect foreign objects

**Scope and timing
of § 103 prior art**

(Post-AIA) 35 U.S.C. § 103 — Conditions for patentability; non-obvious subject matter

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in **section 102**, **if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious** before the effective filing date of the claimed invention **to a person having ordinary skill in the art to which the claimed invention pertains**. Patentability shall not be negated by the manner in which the invention was made.

Scope and timing of § 103 prior art

- § 102: Specific categories of art
 - “patented”
 - “described in a printed publication”
 - “in public use”
 - “on sale”
 - &c
- § 103: just “the prior art”

Scope and timing of § 103 prior art

- So what sorts of things count as prior art under § 103?
 - Possibly: Any § 102 art
 - Possibly: Only certain § 102 art
 - Possibly: Anything public
 - Other?

Scope and timing of § 103 prior art

- So what sorts of things count as prior art under § 103?
 - Definitely anything covered by pre-AIA § 102(a)
 - Definitely anything covered by post-AIA § 102(a)(1)
 - Question: What about backdated patent art?

Hazeltine Research

- Mar. 1954: Wallace files application
- Dec. 1957: Regis files application
- Feb. 1958: Wallace patent issues
- June 1959: Examiner rejects Regis application as obvious in view of Wallace
 - Is Wallace prior art for § 103?

Hazeltine Research

- What does § 103 say about this?

(Pre-AIA) 35 U.S.C. § 103 — Conditions for patentability; non-obvious subject matter

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if **the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made** to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made. * * *

Hazeltine Research

- What does § 103 say about this?
- Can something be obvious to a person of ordinary skill in the art in view of secret prior art?

Hazeltine Research

- Court: Despite the text of § 103, the invention is obvious
- § 103 implicitly recognizes (pre-AIA) § 102(e) / (post-AIA) § 102(a)(2) prior art

Scope and timing of § 103 prior art

- The timing rules of § 103 seem fairly straightforward:
 - Pre-AIA: § 103 art must predate invention
 - Post-AIA: § 103 art must predate filing
- In practice, can be more complex

In re Foster

- Dec. 1952: Foster invents
- Aug. 1954: Binder article
- Aug. 1956: Foster files application
- Result under § 102 if Binder article anticipated?

In re Foster

- Dec. 1952: Foster invents
- Aug. 1954: Binder article
- Aug. 1956: Foster files application
- Result under § 102 if Binder article anticipated?
 - Binder post-dates invention but comes more than a year before application, so prior art under § 102(b) statutory bar

In re Foster

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- Aug. 1956: Foster files application
- Result under § 103 if Binder article renders the Foster invention obvious?

In re Foster

- Dec. 1952: Foster invents
- Aug. 1954: Binder article
- Aug. 1956: Foster files application
- Result under § 103 if Binder article renders the Foster invention obvious?
 - Under the text, it wasn't obvious as of the invention date, so Foster gets the patent
 - But, court: Foster **doesn't get the patent**

In re Foster

- Maybe the statute implicitly reads “at the time the invention was made or one year before the filing date”
- Maybe § 102(b) has an implicit built-in obviousness bar
- Maybe other?

In re Foster

- Is this a good policy outcome?

In re Foster

→ Is this a good policy outcome?

- It prevents double patenting
- It encourages prompt filing
- It seems to basically fix a bug in the law

Post-AIA § 103 timing

→ (This one hasn't been litigated yet)

→ Jan. 2014: I invent X and Y

→ July 2014: I publish an article describing X

→ Mar. 2015: I file a patent claiming X and Y

→ Can I get a patent on X under § 102?

Post-AIA § 103 timing

- (This one hasn't been litigated yet)
- Jan. 2014: I invent X and Y
- July 2014: I publish an article describing X
- Mar. 2015: I file a patent claiming X and Y
- Can I get a patent on X under § 102?
 - My disclosure in July 2014 is carved out, so I can get a patent on X

Post-AIA § 103 timing

- (This one hasn't been litigated yet)
- Jan. 2014: I invent X and Y
- July 2014: I publish an article describing X
- Mar. 2015: I file a patent claiming X and Y
- Can I get a patent on Y under § 103, if X renders Y obvious?

Post-AIA § 103 timing

- (This one hasn't been litigated yet)
- Jan. 2014: I invent X and Y
- July 2014: I publish an article describing X
- Mar. 2015: I file a patent claiming X and Y
- Can I get a patent on Y under § 103, if X renders Y obvious?
 - Text: It was obvious as of filing, so no
 - But: There must be an implicit exception in what counts as § 103 "prior art"

Secondary
considerations

Secondary considerations

- Objective indicia of nonobviousness
- Secondary indicia of nonobviousness
- Objective considerations of nonobviousness
- Secondary considerations of nonobviousness

Secondary considerations

- Commercial success of the invention
- Long-felt (but unmet) need for the invention
- Failure of others to develop the invention
- Professional skepticism of the invention
- Unexpected results
- Prior art "teaching away" from the invention
- In favor of obviousness: Simultaneous (or near-simultaneous) invention by multiple inventors

Secondary considerations

→ What do these add over ordinary considerations of nonobviousness?

Secondary considerations

→ What do these add over ordinary considerations of nonobviousness?

- Less susceptibility to hindsight bias
- More objectivity

Transocean

- Tech: Dual-activity deepwater drilling apparatus
 - *Transocean I*: The invention was just a combination of the Horn and Lund references

Transocean

- Tech: Dual-activity deepwater drilling apparatus
 - *Transocean I*: The invention was just a combination of the Horn and Lund references

Transocean

→ Commercial success:

- Dual-activity drilling rigs command a 12% price premium over the prior art
- Some customers demand dual-activity rigs
- **Why should this matter?**

Transocean

→ Industry praise/unexpected results:

- Competitor: “innovations such as Transoceans dual-derrick concept”
- Offshore Magazine: “critical to future”; “20-40% faster tripping”
- BP doubted it would work and did its own testing; it was even more awesome than Transocean claimed
- **Why should this matter?**

Transocean

→ Copying:

- Maersk: “we have to incorporate the same efficiency improvement features as used by our competitors”
- Maersk concluded it could copy because the Transocean patents were invalid
- Why should this matter?

Transocean

→ Industry skepticism:

- Inventors: People in the industry thought it wouldn't work due to “clashing”
- Why should this matter?

Transocean

→ Licensing:

- Transocean licensed the invention for more than litigation costs
- Why should this matter?

Transocean

→ Long-felt-but-unsolved need:

- Drilling had been moving offshore since the 1970s
- There was a need for improved efficiency and avoiding interruptions
- Why should this matter?

Arkie Lures

- Tech: Plastic fishing lure with embedded salty compound
 - Turns out, fish like salt, and so are less likely to let go of a lure

Arkie Lures

- Secondary considerations of nonobviousness:
 - No one in the industry thought it would work
 - Salt causes problems when embedded in plastic
 - Ruins surface texture
 - Causes explosions (!!)

“The question is not whether salt ‘could be used,’ as the district court concluded, but **whether it was obvious to do so** in light of all the relevant factors. The beliefs of those in the field at the time, including **beliefs that the plastisol lure would lose its surface qualities, texture, and strength, as well as the manufacturing uncertainties**, are the position from which the decisionmaker must view the invention.”

Arkie Lures

“It is insufficient to establish obviousness that the separate elements of the invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the elements. Indeed, **the years of use of salty bait and of plastic lures, without combining their properties, weighs on the side of unobviousness of the combination.** Mr. Larew persisted against the accepted wisdom, and succeeded. The evidence that the combination was not viewed as technically feasible must be considered, for **conventional wisdom that a combination should not be made is evidence of unobviousness.**”

Arkie Lures

Arkie Lures

- So do we want to give Mr. Larew a patent?
 - Does he satisfy the patent bargain?

Secondary considerations

- Exogenous regulatory change
 - *Richardson-Vicks Inc. v. Upjohn Co.*: There was a long-felt need for a combination ibuprofen/pseudoephedrine cold medicine
 - Court: The long-felt need was irrelevant because the odds of getting regulatory approval were low until the FDA announced a change

Secondary considerations

→ Exogenous regulatory change

- *WMS Gaming Inc. v. Int'l Game Tech.*: New slot machine was obvious because it was illegal until it came out
- Court: no, it was illegal until it was invented, like all slot machines

Next time

Next time

→ Patentable subject matter