

Question 1: Memo to Pat Holder, regarding challenges to validity of '123 patent, and responses

Patentable Subject Matter

The first challenge to the validity of the '123 patent is whether the subject matter of the patent is patentable under § 101. Generally, algorithms by themselves are not patentable, but processes that use the algorithm are. (Diamond). Here, a patentable subject matter challenge will not be an issue, because claim 1 of the '123 patent is to an apparatus, not a process, and the claimed algorithm is part of the apparatus. An apparatus patent is clearly not a law of nature, physical phenomenon, or abstract idea (Chakrabarty), and is thus patentable subject matter.

Section 112 Validity

The next challenge to the '123 patent is its utility, under § 112(1). An application for patent is not useful if it is “inherently unbelievable.” (In re Brana). The invention must have some specific and substantial utility, such that it provides a “well-defined” and “presently available” benefit to the public. (In re Fisher). Here, utility will not be an issue. The holographic room is not “inherently unbelievable,” because BPC and FFD have shown the components of the room to work, and WSI has put together a system similar to the patented system. The “force treadmill” and other features of the room are benefits to the public.

Next, the '123 patent will be challenged on enablement grounds, under § 112(1). An invention is not enabled if a person having ordinary skill in the art (PHOSITA), viewing the patent as a whole, must engage in undue experimentation to understand and make the invention. (Amgen). Pertinent factors to whether an invention has been enabled are the amount of guidance given in the specification, the absence of working examples, and the breadth of the claims. (In re Wands). Enablement is viewed at the time of the invention. Here, enablement is an issue for the '123 patent. Claim 1, as amended, claims “software sufficient to coordinate holographic

images....” The specification states simply that “[a]ny programmer with skill in the art can create the appropriate software. Clearly, not much guidance is given in the specification for creating software to coordinate the holographic images. WSI and BPC could argue that it took Pat Holder, the inventor of the holographic room (who arguably should be a PHOSITA), six months to find a software program sufficient to coordinate the holographic images, and that giving no direction in the specification as to how to do this will force other PHOSITA’s to engage in undue experimentation to determine sufficient software. Additionally, WSI and BPC could argue that the difficulty that WSI’s designers had in designing an outdoor version of their product shows how difficult coordinating the images is, without some directions in the patent specification.

The lack of any instruction in the specification makes these arguments hard for Pat Holder to overcome. However, Pat Holder can argue in response that he is not a PHOSITA, and that any qualified computer programmer could do as he did easily. (Of course, this could create an obviousness issue!) He could also use the detailed instructions provided to users of the FFD force generator as evidence that a novice can obtain programmable control, and that a PHOSITA should thus be able to do much more.

Next, the ‘123 patent will be challenged on written description grounds, under § 112(1). An invention is not described if the claims are broader than the supporting disclosure. (Gentry Gallery). In other words, the inventor must show that he is in possession of the invention. Here, written description is not an issue, because all of the claim elements (though not necessarily enabled) are disclosed and encompassed in the specification.

Next, the ‘123 patent will be challenged on definiteness grounds, under § 112(2). In order to allow the public to discern the legal boundaries of a patent, the claims are found indefinite if they are “insolubly ambiguous,” construed in light of the specification.

Additionally, all claim terms must have a proper antecedent basis. Here, definiteness is an issue, because of the terms “means for force field generation” and “software sufficient to coordinate....”

The term “means for force field generation” is a means-plus-function claim, and the definiteness of this term can be construed in light of the specification. However, the specification goes no further than to specify the use of any force field generator. Additionally, the term “software sufficient to coordinate” cannot be construed in light of the specification because the specification simply directs skilled programmers to create the software, and only requires “sufficient” software. Thus, this term could be considered confusing to the public, because they would not know what software could and could not be used without infringing the ‘123 patent. However, Pat Holder could argue in response to these arguments that the claims are only indefinite if *insolubly* ambiguous, a very high standard. Here, the specification of any force field generator is enough notice to the public, because not many exist, and a member of the public would not be confused as to whether he was using one. Additionally, “software sufficient to coordinate” could be construed as simply any software that allows holographic image display.

Next, the ‘123 patent will be challenged on best mode grounds, under § 112(1). Determination of whether the best mode for making and using the invention is determined under a two prong test: 1) Does the inventor have a best mode in mind? 2) If so, is it enabled, such that a PHOSITA would know how to make and use it? (Chemcast). Here, best mode is an issue. Although the specification specifies use of a BPC holographic projector, it does not specify either a best force field generator or software. Pat Holder clearly had a best mode in mind, because he used an FFD force generator to create the invention, and spent 6 months determining the best software for use in the invention. Additionally, it is clear that a PHOSITA could not determine how to make and use this best mode. However, Pat Holder could argue in response

that the best mode is only determined at the time the patent application is filed. Thus, since he filed in Jan. 2020 and the FFD force generator was the only one in existence until July 2020, the best force generator for use in the invention was clear at the time. Additionally, Pat Holder could argue that although he spent time figuring out what software program would work, that any other programs would work as well, and that he has no particular program in mind.

Section 102 & 103 Validity

Critical dates

Next, the '123 patent will be challenged on novelty (§ 102) and obviousness (§ 103 grounds). First, the critical dates for the invention must be determined. The date of invention is determined by either the date of reduction to practice, or the date of conception, if there is corroborated diligence through to reduction to practice. Here, Pat Holder could not be considered to have conceived of the holographic room at least until June 2018. At this point, he discovered the existence of the force generator and holographic projector, and began work on the holographic room. A prototype was finished on December 30, 2018. Thus, the latest that Pat Holder could establish his date of invention is Dec. 30, 2018, and the earliest (with corroboration of conception) is June 2018. The other critical date is one year before the date of filing, Jan. 2, 2020. Thus, this critical date is Jan. 2, 2019.

Applicable Prior Art

Next, the applicable prior art must be determined. The Star Trek shows, destroyed in the disaster of 2012, cannot be considered prior art, because they are lost. Lost art provides no public benefit, and therefore does not anticipate. (Gayler). The book, "How it Works," is also not prior art. The prior art status depends on whether the book is publicly accessible (In re Kloppfenstein). In other words, it depends on whether a version other than the one in Pat

Holder's private library exists. However, even if one was found to exist, it is a work of fiction and cannot be considered a prior art printed publication. Publications must have "enough currency" to be part of the art (Jockmus), and a fictional account of a Holodeck is not enough.

The next possible piece of prior art is the holographic projector manufactured by BPC. It was introduced in Japan in Jan. 2018. This public knowledge is not prior art under 102(a) or (b), because it did not occur in the U.S. A PCT application was filed in Japan, in Japanese, on July 1, 2018. This is not prior art under 102(e) because it was not filed in English. (The claims of the Japanese application, if granted, could constitute 102(a) or (b) prior art. (Reeves Bros). Additionally, if the application was published, it could have constituted 102(a) or (b) prior art. However, these details are not made clear, so will be ignored for this analysis.) A U.S. patent application was filed on June 30, 2019. This is not prior art under 102(e), because the filing date was clearly after the invention date of Dec. 30, 2018. The projector was first sold in the U.S. in August, 2019. This is not prior art under 102(a), because any public use occurred after the invention date. It is also not prior art under 102(b), because the sale occurred after Jan. 2, 2019. The U.S. patent application was published on Dec. 31, 2019. This is not prior art under 102(a) or (b), because the publication did not occur before the date of invention or a year before the filing date. Thus, the BPC projector is not prior art for purposes of the '123 patent.

The next possible piece of prior art is the FFD force generator. The generator was first sold in the U.S. in May, 2018. This sale is both before the date of invention and one year before the filing date. Thus, it constitutes prior art at least under 102(b), as a public sale in the U.S., and possibly under 102(a), as public knowledge in the U.S.

The next possible pieces of prior art are the WSI kits. WSI began work on realistic warfare simulations in May 2018. However, work in earnest did not begin until the BPC

holographic projector hit the market in 2019. WSI's prototype was complete on Jan. 1, 2021. WSI could argue that the prototype constitutes prior art under 102(g), because it was conceived of in May 2018, before the date of invention, and worked on diligently until reduction to practice in 2021. However, conception must encompass all limitations of an invention, and be definite and permanent. (Brown). Here, WSI did not conceive of the use of a holographic projector in its prototype at least until Aug. 2019, when the BPC holographic projector hit the market. This is after the invention date of Dec. 30, 2018. Thus, the WSI kits are not prior art to the '123 patent.

The final prior art is Pat Holder's own actions. An inventor's actions can act as a statutory bar to patentability under § 102(b) if the inventor takes some action to exploit his invention more than a year before filing for a patent. The critical date here is Jan. 2, 2019. Here, Pat produced a website for the holographic room on January 1, 2019. The website asked that people "submit pricing and technical inquiries" to Pat. The pertinent inquiry here is whether this statement was an "offer for sale" under § 102(b). The on-sale bar of § 102(b) applies when two conditions are satisfied before the critical date: 1) the invention must be ready for patenting, and 2) the product must be the subject of a commercial offer for sale. (Pfaff). Here, the invention was ready for patenting on Jan 1, 2019, because a prototype was complete, and the "fine tuning" that occurred afterward to ready the product for commercial use does not change this status (Weatherchem). Although WSI and BPC would argue that the words "submit pricing...inquiries" are an offer for sale, it is probably not. Inventors may market their product, and even distribute quote sheets, as long as no "commercial offer for sale" is made under standard principles of contract law (Gemmy Indus. Corp.). Here, no offer for sale was made, just an offer for inquiries into pricing and technical details. This is analogous to distributing quote sheets, and is not an offer for sale. Thus, Pat Holder's actions are not prior art under § 102(b).

Section 102

The only applicable piece of prior art for § 102 and § 103 analysis is the FFD force generator, under § 102(b). The force generator clearly does not anticipate the '123 patent. Anticipation requires that “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” (Robertson). Here, the force generator is only one element of claim 1 of the '123 patent, and thus cannot constitute “each and every element.” Thus, the '123 patent is not anticipated.

Section 103

It must also be determined whether the '123 patent is obvious under § 103. The FFD force generator, which is prior art under § 102(b), is also prior art for § 103 purposes. (In re Foster). It is also pertinent to a § 103 analysis, because it is part of the field of endeavor of the '123 patent. (In re Clay). Thus, a four-prong test is utilized to determine whether the '123 patent is obvious in view of the FFD force generator:

1. Determine the scope and content of the prior art
2. Ascertain the differences between the prior art and the claims at issue
3. Find the level of ordinary skill in the art
4. Determine the obviousness or nonobviousness of the subject matter.

(Graham, KSR). Here, the prior art has been determined to include the FFD force generator. The differences between the generator and the claims at issue are that the generator does not include a holographic projector or software sufficient to coordinate holographic images. The level of ordinary skill in the art includes knowledge of all pertinent art (In re Winslow), which includes the FFD force generator, but does not include the BPC holographic projector or the WSI kits. Thus, since one of ordinary skill in the art would not know of the existence of holographic

projectors, much less how to combine them with force generators, the '123 patent cannot be found obvious in view of the FFD force generator.

Question 2: Memo to WSI, regarding claims of infringement and remedies, and responses

Literal Infringement

Pat Holder is likely to accuse both the “Urban Warfare Simulation” and “Jungle Warfare Simulation” kits of infringement. Literal infringement analysis is done by comparing each claim element to the accused products. The specification and prosecution history may be used to determine the meaning of each claim (Philips). The elements of claim 1 include a holographic projector, means for force field generation, and software sufficient to coordinate holographic images. The specification states that “any force field generator will suffice,” and that “any programmer with skill in the art can create the appropriate software.” Thus, the holographic projector and means for force field generation elements are clearly present in the WSI products. WSI could argue that the “software sufficient to coordinate holographic images” element is not infringed by the “design console” of the WSI products. First, WSI would assert that the ‘123 patent is invalid as not enabled, not disclosing the best mode, and not definite (see Question 1 analysis). Then, WSI could argue that the software element, added in an amendment, only serves to connect the projector and generator. WSI could argue that the design console does significantly more than simply connecting the projector and generator, because it allows users to create their own environments. However, this argument is irrelevant if the claims are found to be valid, since the design console does connect the projector and generator.

WSI’s can also make another argument against infringement, but only with regard to the “Jungle Warfare Simulation.” The argument is that the preamble to claim 1 be read as a claim limitation. The preamble requires a “holographic room.” Further, the specification requires that the projector and generator be mounted in a room, lending force to the argument that “room is a claim limitation.” Thus, although the “Urban Warfare Simulation” would still infringe, the

“Jungle Warfare Simulation” would not, because the projector and generator are mounted outdoors.

It is likely that the “Urban Warfare Simulation” product will be found to infringe. However, if a good argument is made regarding the “room” limitation, the “Jungle Warfare Simulation” would not be found to infringe.

It should be noted that if “Jungle Warfare Simulation” is found not to literally infringe, because of the added claim limitation of a “room” for the ‘123 patent, a doctrine of equivalence test would also be unsuccessful, because the test is done on an element-by-element basis. (Warner-Jenkinson).

Defenses

WSI’s first available defense is the reverse doctrine of equivalence. This defense arises when the USPTO has granted a very broad patent, and the accused infringer has made some great leap in technology. (*See Scripps*). Courts will find non-infringement if it would be inequitable to hold the defendant liable. Here, the ‘123 patent, if found valid, is very broad. However, WSI could argue that it has made a great leap in technology through the “design console,” which allows users to create different environments. To be successful in this argument, WSI must provide evidence of Pat Holder’s difficulty and six-month effort to find a computer program to link the projector and generator, and can look to the language of Pat Holder’s specification that a programmer needs skill in the art to find a program that links the projector and generator. WSI can also argue that the “Jungle Warfare Simulation” (if found to literally infringe) can be mounted outside, and that this is a significant technological advance over the ‘123 patent, which was intended for inside use only. WSI could then argue that it has made the great leap in technology to allowing users to program their own environments, a

significant leap from the technology of the '123 patent, and that it would thus be inequitable to find WSI liable.

WSI's second defense is that Pat Holder engaged in inequitable conduct, and that the '123 patent is thus unenforceable. To prove this defense, WSI must show 1) that Pat Holder withheld information material to patentability, and 2) Pat Holder intended to deceive the USPTO. (J.P. Stevens, PTO Rule 56). Assuming that Pat Holder disclosed no prior art to the USPTO, WSI could argue that both the book "How it Works" and the FFD force generator were material, because a reasonable examiner would have considered them important (J.P. Stevens). (Note that information need not invalidate a patent for it to be material. (Critikon)). WSI could also argue that Pat Holder intended to deceive, by her statement in the specification that the holographic room was "heretofore...not even imagined." This statement is clearly contrary to the discussion of the Holodeck in "How it Works." Thus, WSI could argue that Pat Holder intended to deceive the USPTO by omitting material information, and thus engaged in inequitable conduct, and that the '123 patent is thus unenforceable.

A final defense is that WSI only ships "kits" to customers, and the components of the kits do not literally infringe the '123 patent. WSI could argue that it is not knowingly inducing infringement, because it is unaware of the '123 patent, and thus that WSI is not liable under §§ 271(b) & (f).

Experimental use is not a defense here, because WSI is clearly using its product commercially. Prosecution laches is also not a defense here, because Pat Holder did not wait excessively long to file a patent application. Finally, patent misuse is not a defense here, because no licensing agreements are in question.

Remedies

Pat Holder will likely ask for both a preliminary injunction and damages, for lost profits and reasonable royalties.

Injunction

A four factor test is used for determining whether a preliminary injunction should be granted:

1. Reasonable likelihood of success
2. Irreparable Harm
3. Balancing of hardships
4. Impact on public interest

(Ebay). Here, it has been established that Pat Holder has a reasonable likelihood of success, because the WSI product literal infringes. Thus, WSI must argue that monetary damages would suffice if Pat Holder won, and that balancing hardships and considering the impact on the public interest, an injunction is unwarranted; the WSI products are used primarily by military and police forces, and provide superior training to any other product. Taking this training ability away would impact public safety in a very negative way.

Damages

Damages for lost profits are calculated using a 4-prong test:

1. Demand for the patented product
2. Absence of substitute for the patented invention
3. Capability to sell the patented product
4. Amount of profit that would have been made on the patented product.

(Panduit). Here, it is clear that Pat Holder's product was in high demand, because of the hundreds of inquiries received on his website. It is also evident that there are no substitutes for the patented invention, aside from the infringing products. Assuming Pat Holder works by himself, his capability to sell his product might not be high. Finally, Pat Holder might be able to prove that he could make a significant profit if the "Urban Warfare Simulation" did not infringe, but cannot make this same argument for the "Jungle Warfare Simulation." The "Jungle Warfare Simulation" can be set up outside, a capability which Pat Holder's product does not have. Thus, despite the availability of Pat Holder's product, people who desired outside simulation instead of inside simulation would have bought the "Jungle Warfare Simulation." Thus, Pat Holder has a high likelihood of recovering lost profits on the \$15 million from the "Urban Warfare Simulation," but not the "Jungle Warfare Simulation." Additionally, Pat Holder can recover at least reasonable royalties, such that WSI does not make a product.

WSI's best argument against an award of damages is general laches. WSI introduced its "Urban Warfare Simulation" in June 2021, but Pat Holder did not file suit until January 2025. If it can be shown that Pat Holder knew of WSI's actions, did not send WSI notices of suit, and instead waited as WSI's profits grew, WSI may be able to show that Pat Holder's delay was unreasonable, and based on material prejudice.

Question 3: Memo to Judge regarding BPC's Motion to Dismiss

BPC sells its holographic projectors to WSI, which ships the projectors in kits to anywhere in the world. The holographic projector is an element of the '123 patent, which WSI's kits are accused of infringing. BPC has moved to dismiss, based on non-infringement. The issue here is whether, if WSI's kits are found to infringe the '123 patent, BPC can be found liable for indirect infringement.

Anyone who sells within the U.S. a component of a patented machine, knowing that the component does not have a substantial non-infringing use, is liable as a contributory infringer. (§ 271(c)). Anyone who actively induces infringement of a patent shall be liable as an infringer. (§ 271(b)).

In selling holographic projectors to WSI, BPC is selling a component of the '123 patent, and may be liable under § 271(c). Thus, the question is whether there is a substantial non-infringing use for the holographic projectors. This issue is a question of fact left for the jury. (C.R. Bard). To be found liable under § 271(b), BPC would have to knowingly induce infringement. This issue is also a question of fact left for the jury. (C.R. Bard). Thus, BPC's motion to dismiss should be denied, and the issues of indirect infringement under § 271(b) and § 271(c) should be given to the jury.