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Patent Law

QUESTION 1

Challenges to Validity

A. Utility

An invention must have utility in order to be patentable: operable, beneficial, and practical. The PTO assumes that the invention has operable utility, that it actually works, unless it is unbelievable. Here, it is believable that someone would invent a screw that resists stripping, so operable utility is met. However, one may argue that operable utility is not met because the screw "doesn't work at all – the drivers strip the screw heads just as badly as a flat head screw." That will not defeat operable utility either. The screw need not be the best. (Lowells) In addition, this statement makes clear that the screw is operable - as operable as a flat head screw.

Inventions lack beneficial utility if they are harmful or deleterious. Screws do not fit under this category. Pat's invention has practical utility because it provides a well-defined and particular benefit, creating a fastener, (specific utility) and that benefit is presently available because it can be used to fasten things (substantial utility). (Brenner, Fischer)

B. Enablement

In order to secure a patent, the applicant must describe the invention so that the PHOSITA can make and use it. If undue experimentation is required to make and use the invention, the invention is not enabled. (Incandescent Lamp). Relevant factors to consider are the quantity of experimentation necessary, the direction provided, the presence of working examples, the

nature of the invention, the state of the prior art, the level of skill in the art, and the predictability in the art. (Wands).

Here, it would be clear to the PHOSITA how to use the invention because the prior art works the same way (driver drives screw). Pat provided enough instruction to allow the PHOSITA to make the screw also. Although he does not give specific dimensions, the wings must be bigger than the central recess, which is a standard dimension that the PHOSITA will have a feel for. To determine how big the wings need to be, the PHOSITA will need to do a little bit of experimentation, but it will be predictable – the driver may not catch on a wing that is too small, but it will catch if the wing is big enough.

C. Written Description

In order to secure a patent, the invention must be described in such a way that it is clear that the inventor had possession of the invention at the time of filing. (The Gentry Gallery)

a. Claim 1

In claim 1, patent claims all threaded shafts with a head that has a recess and wings of any shape. A challenger will argue that the specification proves only that Pat was in possession of a pointy-tipped screw with a square recess and trapezoidal wings. At a maximum, Pat was only in possession of a pointy-tipped screw with a square recess and wings that could receive torque.

Pat will disagree. Although he mentioned and square recess and trapezoidal wings as his preferred embodiment, he did not limit himself to that, even in the specification ("they could be any shape"). Alternatively, he does not claim all shapes, he only claims the genus of shapes that can accept force. (See Incandescent Lamp and fibers).

b. Claim 2

Claim 2 is especially suspicious because it was added as an amendment. If Pat had possession of this claim, why didn't he claim it in the first place? Why did he wait until after he saw the Japanese Bolt application? If the triangular wing can accept force, claim 2 meets the written description requirement because in the specification he tells the PHOSITA that any shape that can accept force will work.

D. Definiteness

An applicant must inform the PHOSITA of the scope of the invention with reasonable certainty. The perspective is at the time of filing. (Nautilus). Here, Pat narrowly drafted his claims. The claims only screws with threaded shafts, with heads with a recess and wings. His second claim is even more narrowly drafted. Although he does not provide specific dimensions, they would be easily ascertainable by the PHOSITA when looking at the size of a standard screw. (See Orthokinetics). A competitor would know exactly what would be infringing and what would not be. Pat is unlikely to see a definiteness challenge.

E. Prior Art

Note: The Ikea bolt is not analyzed as prior art per the direction given in footnote 1.

In order to determine if an invention meets the requirements to be novel and nonobvious, one must first find out what existed prior to the invention, the "prior art." Prior art must have a reference date before Pat's critical date (filing date, 12/31/15).

a. Sending Plans to China

The issue is whether sending the plans to China makes them "otherwise available to the public." Under 102(a)(1), if an invention is "otherwise available to the public", before the critical date, it is prior art. Pat sent the plans and fabrication steps on 7/1/14, before the critical date. However, these plans did not become "otherwise available to the public" because there is an implied NDA between inventors and their fabricators. (See Aluminum Co of America). Therefore, this activity is not prior art.

b. Selling Screw

The issue is whether Pat selling the screws is prior art. Under 102(a)(1), putting a patent-ready invention for sale anywhere in the world, before the critical date, is prior art. (Pfaff). Pat placed the screws on sale on 12/15/14, before the critical date. The invention was ready for patenting on that date, as evidenced by the completed plans sent to the fabricator on 7/1/14 and the physical embodiment of the screw on sale. Although there is no mention of completed sales, the code only requires an "offer"; it does not require a completed sale. Therefore, Pat selling the screws is prior art.

Pat may be able to exclude this reference 102(b)(1). Under 102(b)(1), a prior art reference can be excluded if the disclosure came from the inventor no more than one year before the filing date. Here, although the disclosure came from the inventor because Pat was the person selling the screws, but he did so more than a year before the filing date (12/15/14 v. 12/31/14). Therefore, Pat cannot exclude this reference as prior art.

c. Professor's Article

The issue is whether the engineering professor's article about Pat's invention is prior art. Under 102(a)(1), a printed publication is prior art if it provides enabling disclosure of the invention. A printed publication must be sufficiently accessible to those interested in the art. (Klopfenstein).

Here, an article was published prior to the critical date (6/1/15), but Pat will argue that the publication is not enabling. It only described the "basic discovery" – the wings – not the recessed portion or the threaded shaft. Further, it is unclear whether those interested in the art could find the article: was the article included in a magazine? In a book?

A challenger would argue that the publication is enabling because although it only describes the wings, that is the heart of the invention. Further, a published article is available to the public even if there was only one copy that was hard to get it and no proof that anyone actually saw it. (Constant v. Advanced Micro-Devices). At a minimum, that is the case here. A court would likely find that the professor's article qualifies as prior art.

d. Phillip's Patent

The issue is whether the Phillip's patent is prior art. Under 102(a)(1), a patent that issues before an invention's critical date is prior art as to what it claims. (Reeves). Further, items that are in public use, those which the public has free and unrestricted use, are prior art. (Moleculon). Here, the Phillip's patent issued before the critical date (7/7/36) and was in public use since at least before the critical date. Therefore, it is prior art.

e. Con's Applications: Published Patent Applications

The issue is whether Con's published patent applications are prior art. Under 102(a)(1), a printed publication is prior art if it was published before the invention's critical date. Here,

Con's patent applications published after the critical date (7/1/16 and 7/1/17) and therefore are not prior art.

f. Con's Applications: PCT Application

The issue is whether Con's PCT application is prior art. Under 102(a)(2), a patent application that is filed before an invention's critical date is prior art as of its filing date if it eventually publishes. Here, Con filed a PCT application designating the US on 1/1/15. It was written in Japanese, but that does not matter under the AIA. He timely filed a US application on 1/1/16 claiming the PCT filing date as his effective filing date. The US application later published. Therefore, Con's PCT application is prior art as of his earliest effective filing date, 1/1/15, before Pat's critical date.

Pat may be able to exclude this reference as prior art under 102(b)(2) if he publicly disclosed his invention before the filing date of Con's PCT application. Pat will claim that he publicly disclosed his invention on 12/15/13 when he placed it on sale. Con will argue that placing the screws on sale did not adequately give the benefit to the public to constitute public disclosure. A court could go either way on this issue.

F. Novelty

In order to be patentable, an invention must be novel. An invention is novel if no enabling prior art reference has all of the invention's elements. (Hafner, Robertson). Here, claim 1 has 2 elements: a shaft and a head. The shaft must be threaded. The head must have a central recessed portion and one or more winged recessed protruding from the central recessed

portion. Claim 2 contains the same elements, except that the recess is in the shape of a rectangle and the wings are in the shape of triangles.

a. Selling Screw

The issue is whether the screw that Pat sold has all the elements in claim 1. The screw Pat sold is enabling because it is a physical thing. Further, we know that the screws Pat sold had every element of claim 1 because Pat drafted claim 1 off of the screw he manufactured (assumption). Therefore, the screws Pat sold anticipate claim 1.

Claim 2 is narrower than claim 1. The issue is whether the screw that Pat sold has all the elements of claim 2. It is assumed that the screw Pat sold looks like the one pictured in the exam – square recess with roughly trapezoidal wings. Because the screws Pat sold lack triangular wings, they do not anticipate claim 3.

b. Phillip's Patent

The issue is whether the Phillip's patent has all the elements Pat claims in his patent application. The Phillip's patent is enabling because patents must be enabling and because the item is physically available. The Phillip's head has a shaft and a head. The shaft is threaded. The head has a central recessed portion. However, the Phillips patent has no wings. Rather, it is just an "X" shape. Therefore, the Phillip's patent does not anticipate Pat's patent.

c. Con's Applications: PCT Applications

The issue is whether Con's applications has all the elements that Pat claims. This reference in assumed to be enabling. Con's bolt has a shaft and a head. The shaft is threaded. The head has a central recessed portion, which is shaped like a square, and wings protruding

from the central recessed portion, which are shaped like triangles. Con's applications would anticipate claims 1 and 2.

G. Obviousness

An invention must be nonobvious because the PTO wishes to reward only non-trivial advances with patent protection. The five steps of the obviousness analysis are shown below. (Graham v. John Deere)

1. Define the scope of the prior art

Only *analogous* art is relevant in the obviousness inquiry. Therefore, we must eliminate all of the non-analogous art from the pool of prior art discussed above. Prior art is analogous if it is within the same field of endeavor or reasonably pertinent to the problem to be solved. (Clay).

a. Selling Screw

The screw Pat sold is analogous because it is the same invention.

b. Phillip's Patent

The Phillip's patent is analogous because it is within the same field: screws. Further, it is reasonably pertinent to the same problem: avoid stripping screws.

Pat will argue that it is not analogous because the Phillip's screw is "not useful for high-powered drivers used in construction." A court would likely disagree with Pat and find the Phillip's patent analogous.

c. Con's Applications: PCT Applications

Pat will argue that Con's applications are not analogous art because they are not in the same field – they are not used to construct with wood. Rather, they are used in automobiles. Further, they are not relevant to the problem to be solved because they do not have the same stripping problem. While a stripped screw cannot be tightened or loosed, a bolt can be tightened or loosened via its bolt. A challenger will argue that Con's applications are analogous art because they are in the same field of fasteners and although they are not "featured for [their] ability to avoid stripping" does not mean that they do not effectively solve the stripping problem.

2. Compare the prior art to the invention

a. Selling Screw

Claim 1 teaches wings that adding wings will put less pressure in the screw's indentations, thereby avoiding stripping. Claim 2 teaches that wings can be triangular shaped.

b. Phillip's Patent

The Phillip's patent teaches that firm contact between equidistant angular faces on a screw and a correspondingly shaped driver avoids the tripping problem. Pat's patent teaches that adding wings will put less pressure in the screw's indentations, thereby avoiding stripping.

c. *Con's Applications: PCT Applications*

Con's application teaches a new shape of wing: the triangle. Pat's claim 1 teaches any shape of wing. Pat's claim 2 teaches triangular shaped wings.

3. Define the relevant skill in the art

The PHOSITA is a shop engineer.

4. Secondary considerations

Secondary factors include commercial success, long felt but unresolved need, and failure of others. Pat will claim that secondary considerations show that his invention is nonobvious. First, there has been a long felt but unresolved need: screw stripping is "an age-old problem" since at least the 1930s when Phillips tried to solve the problem with his patented invention. Even after Phillip's invention, the problem lived on (failure of others); Ikea has been selling hex bolts to deal with the problem in the 1980s. A challenger will argue that Pat's invention does not meet a long-felt need – it doesn't work! Instead, "the drivers strip the screw heads just as badly as a flat head screw.

5. Determine if the invention is obvious

A court would likely find parts of Pat's claims obvious and other parts nonobvious. A court would find that when the wings are spaced equally apart, they are obvious in light of the Phillips patent. Although the Phillips patent was the third patent of its theme, it was pioneering, and therefore it is interpreted very broadly. (Wright Brothers). In essence, Phillip claimed "firm contact between equidistant angular faces" – that is exactly what Pat claims when his wings are equidistant. However, the court will find nonobvious all variations that include wings that are not equidistant.

H. Subject Matter

Any process, machine, manufacture, composition of matter, or improvement thereof if patentable. However, laws of natural, physical phenomenon, and abstract ideas, without more, are unpatentable subject matter. (Diamond). Pat is unlikely to see a subject matter challenge because he is patenting a human-made screw. A challenger may argue that the steel the screw is made out of is a physical phenomenon, but that argument would fail because Pat added additional features to make it suitable for fastening. (See Mayo test).

QUESTION 2

Pat Sues Con for Infringement

A. Infringement Analysis

Pat will allege that Con's bolt infringes claim 1 and claim 2 by selling the Japanese Bolt. The first step to an infringement analysis is to interpret the claims. Canons of claim construction are used to help: ordinary v. contextual meaning, lexicographer rule, disclaimer, claim differentiation, and purpose of invention. The second step is to compare the claims to the accused device.

a. "a screw"

The preamble describes Pat's invention as a screw. Con will argue that the ordinary meaning of a screw includes a pointed tip, whereas an ordinary meaning of a bolt includes a flat tip. Therefore, Con's flat-tipped bolt does not infringe. Pat will argue that preambles do not limit the invention and that the Ikea "screw" has no pointy tip, so not all screws have a pointy tip.

b. "winged recesses"

Con will argue that Pat defined the winged recesses as "capable of receiving high torque forces" in the specification and thus the claims must be interpreted according to this interpretation (lexicographer). Con will further argue that triangular shaped wings are not capable of receiving high torque forces and therefore Con's bolt does not infringe. Pat will argue that the triangular wings are capable of receiving high torque forces. A court would need to determine if the wings are capable of receiving high torque forces. It will probably find that they cannot and therefore find no infringement.

c. <u>the fabrication of components using a screw and a driver</u>

Con will argue that there is no infringement because Pat's invention imagines a screw as driven by a driver, but his bolt does not need a drive – it can still operate as a fastener when the nuts are hand-screwed on. A reading of the specification supports the claim that Pat only claimed a fastener that is used with a driver. To further strengthen this position, Con will argue that the purpose of the screw is to avoid stripping in heavy wood construction, where a driver is needed. Because Con's bolt is not limited for use with a driver, he will claim that there is no infringement. On the other hand, Pat will argue that this occurs in the preamble and is thus not limiting. In addition, limitations from the specification must not be read into the claims. On the other hand,

Pat will also argue doctrine of equivalents – he will argue that the hand that turns the nut does the same thing, in the same way, to produce the same result as the driver. He will cite the Wright Brothers case which found a human to be an equivalent to a system of pulleys. On the other hand, Con will argue that a hand does a different thing than a driver. A hand twists a nut. A driver engages with a screw head to twist the screw.

d. <u>Additional Elements</u>

Finally, Con will argue that the all elements rule is not met because his invention adds an additional element – a nut. Pat will argue that Con's bolt still meets Pat's claim language and therefore infringes.

e. Conclusion

A court will probably find no infringement because the claim, when read in light of the specification, only include pointy-tipped screws and triangular wings cannot receive high torque forces.

B. Defenses to Infringement

If a court finds infringement, Con will argue that there he did not infringe, that the patent is invalid, and that there was inequitable conduct during Pat's patent's prosecution. If a court finds inequitable conduct, Pat's entire patent will be invalidated. In addition, Pat could be in trouble with the PTO if he has a PTO license. Inequitable conduct occurs if the applicant engages in egregious behavior or if the applicant fails to disclose material information with the intent to deceive the patent office into patenting the invention. (Therasene)

Pat became aware of the Japanese Bolt application and then amended his application to include Claim 2, which describes the head of the Japanese bolt. When he amended the claim, Pat had a duty to tell the PTO about the Japanese Bolt application, if they did not already know about it. The Japanese Bolt application was material to at least claim 2's patentability because, if it is prior art, claim 2 could not issue. Con can prove inequitable conduct if he can prove that (1) Pat failed to disclose the Japanese Bolt application (2) with a specific intent to deceive the patent office and (3) if Pat had disclosed the Japanese Bolt application the claim 2 would not have issued. This will come down to intent and whether the court excludes the PCT Japanese Bolt application from prior art.

Alternatively, Con will need to prove that Pat acted "egregiously" by submitting a claim over which he did not invent (claim 2) after seeing that the Japanese Bolt application would fall within Pat's claim language. If Pat can prove this, a court will likely find inequitable conduct.

QUESTION 3

Differences Under Pre-AIA

Under Pre-AIA law, the critical date is usually the invention date. The invention date is when conception is reduced to practice by creating a prototype or by filing a patent application. Here, Pat reduced his invention to practice in the US when he received the shipment of screws from the fabrication shop. He will only be able to prove an invention date as early as 12/15/14 when he placed the screws on sale because his recipe of the shipment was unwitnessed whereas the placing on sale was. (assumed).

A. <u>Changes in Prior Art, Novelty, and Obviousness</u>

The Phillip's 1930's patent is still prior art because it patented, publicly used, and publicly known to others in the USA before Pat's invention date. Pat's sale of the screws is still prior art because, more than a year prior to his filing date, he put them on sale in this country. (102(b)).

The plans Pat sent to China are still not prior art because, although there is an argument that could be made that sending the plans made Pat's invention publicly known in China, public knowledge is only relevant if it is in the USA. The professor's article is not prior art under 102(a) because it was published after the invention date and also not prior art under 102(b) because it was not published more than a year prior to Pat's filing date.

Con's published applications are still not prior art because they were not published until after Pat's invention date. However, while under AIA Con's eventually published patent applications were prior art that may have been excluded, under pre-AIA, they are definitely not

prior art. Under 102(e) an inventor can only claim an earlier filing date from a PCT application if the PCT application designates the US and is written in English. Con's application is written in Japanese. Therefore, his earliest filing date for 102(e) is his US filing date, 1/1/16, which is after Pat's invention date. Further, even though Con reduced to practice first, he cannot challenge Pat under 102(g)(1) because he did not claim his invention in the PCT application until after Pat's invention date.

A court's conclusions regarding novelty and obviousness would be unchabged from the analysis in question 1.

B. <u>Additional Effects</u>

Pat's claim 2 may be unpatentable under 102(f) if just copied it from Con's application and did not invent it himself.

Because Con's PCT filing was in Japanese, he cannot claim his PCT filing date as his US filing date. His filing date is his US filing date, 1/1/16, after Pat's invention was on sale, published in an article, and filed in the PTO. Therefore, unlike under AIA, Pat's patent will be prior art to Con and may preclude Con from getting a patent.