

Exam ID: 6168

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Patent Law Final

**Question 1: Validity****(1) Patentable Subject Matter**

Under §101, patentable subject matter includes “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” However, patents may not be issued to inventions that are merely claiming laws of nature, physical phenomena, or abstract ideas (**Chakrabarty**).

FRU would argue that this patent is directed towards a patent-ineligible-concept. Under the **Alice** test, which utilized the Court’s reasoning in **Mayo**, we must first determine (1) whether claims are directed to one of the patent-ineligible concepts, then (2) examine elements of a claim to determine if it contains an inventive concept sufficient to transform the claimed patent ineligible concept into a patent eligible invention (**Alice**). For the 1<sup>st</sup> step, FRU would argue that water expanding when it freezes is a law of nature and increasing air flow through ventilation to prevent a “vacuum” effect by water in the pipe is again a law of nature. Pat could respond that at some level, all patentable inventions are directed towards a law of nature, and FRU’s reasoning is too abstract by viewing the invention in such a “macro” way. Even if this is directed towards a law of nature, this utilizes a physical device that adds an inventive step, it is not an instruction simply saying to apply the abstract idea (**Mayo**). The hydrant is an actual device that includes several inventive steps, including a ventilation cap and elongated tube in order to solve a

problem, it in no way simply recites instruction to carry-out a patent-ineligible concept (**Mayo**). Thus, even if the court would find this meets step 1 of Mayo, which is stretching it as it is, Pat's device adds an inventive concept and is a physical device that transforms the law of nature into a patent-eligible device.

## (2) Utility

Under sections 101 and 112, inventions must have three types of utility: beneficial, practical, and operable.

Beneficial utility prevents patenting of inventions that are “injurious to the well-being, good policy, or sound morals of society” (**Lowell**). However, the Federal Circuit has recently cast doubt on this policy and has stated that as long as an invention is capable of providing some identifiable benefit, even if it is deceptive, it is useful (**Juicy Whip**). This should not be an issue here because this invention clearly provides an identifiable benefit (preventing pipes from bursting) and is in no way deceptive or injurious to the public as it actually helps people solve a common problem.

Operable Utility requires that the utility not be inherently unbelievable and mainly comes into play for fantastic claims. There is a presumption of operable utility. This again should not be a problem because similar elongated hose bibs have already been in use, and using ventilation to solve the “vacuuming” effect is also well-known, so this presumption of operable utility should not be overcome as there is nothing inherently unbelievable about this invention.

Practical utility requires that an invention has a well-defined and particular benefit to the public (specific benefit) and has a significant and presently available benefit to the public (substantial benefit) (**In re Fisher/In re Brana**). Here, the practical utility is evident as the well-

defined use is preventing pipes from bursting, and this is clearly a particular benefit to the public as it will save people money due to burst pipes flooding their houses. Again, this is a significant and presently available benefit because people can install this into their houses right now and it will prevent their pipes from bursting, which can be a large expense.

### **(3) Adequate Disclosure: Enablement, Written Description, and Definiteness**

#### **A. Enablement**

For Enablement, the inventor must describe the invention clearly enough so that an ordinary person skilled in the art (a “PHOSITA”) can understand it well enough to make and use it.

Enablement is assessed from the time of filing the application (**Jannsen**). If a PHOSITA would have to engage in undue experimentation to make and use the invention, it is not enabled (**In re Wands/Incandescent Lamp**). The **Wands** undue experimentation factors include: (1) quantity of experimentation necessary, (2) amount of direction or guidance presented, (3) presence or absence of working examples, (4) nature of the invention; (5) state of the prior art, (6) relative skill of those in the art, (7) predictability or unpredictability of the art, and (8) breadth of the claims.

For claim 1, FRU can argue that a PHOSITA would have to engage in undue experimentation to figure out where to put this hydrant in regards to the wall of the house and what an actual sufficient elongated tube length is to avoid freezing. However, Pat can argue that a PHOSITA would not have to engage in undue experimentation as a PHOSITA would know where to place a hydrant such as this in regards to a wall as similar hydrants have been in use for a long time. Additionally, in the specification, Pat noted that the fluid closure valve is located within the wall, and specifically cited to number 20 in the figure as the inlet pipe inside the house, again providing guidance. Pat can argue that a PHOSITA would not need to engage in

undue experimentation to figure out what a sufficient length is as elongated tubes have been used previously as well, so the PHOSITA can fill in the gaps. FRU may also try to argue that there is no guidance as to where to place the vent on the device. Pat again can argue here that his Figure at least provides an example (#70), and a PHOSITA familiar with the “vacuum” effect would know where to place the vent in order to allow for sufficient air flow in the tube. Thus, using the **Wands** factors, there is sufficient guidance in the specification and prior art, there are several working examples, and no additional experimentation should be necessary.

For claim 2, which is dependent on claim 1, adds that the vent extends upwardly from the elongated tube. This is very straightforward and it would be hard to argue that this is not enabled.

#### B. Written Description

The Written Description must clearly allow PHOSITAs to recognize the inventor invented what is claimed, *i.e.*, the inventor had possession of the claimed subject matter as of the filing date (**Ariad Pharm. v. Eli Lilly/Gentry Gallery**). Here, FRU may try to argue that Pat claimed too broadly by claiming a vent that isn’t just extending upwardly from the elongated tube, and could possibly be anywhere on the elongated tube in claim 1. FRU would say that in the only figure provided, the vent is extending upwardly, and no other location or method of venting is mentioned in the specification, so Pat did not possess the knowledge of any other vent location as of the filing date (**Gentry Gallery**). Here, Pat could respond by saying that these were just examples provided in the specification and these limitations should not be read into the claims when the language of the first claim is clearly broader than the second dependent claim, thus evidencing he knew of other locations to put the vent (see **Markman**). This will likely be a close issue and it is not clear how a court would rule, as both sides have strong arguments here, so it’s

possible the first claim could be knocked out and only the second dependent claim would remain with the specific valve location.

### C. Definiteness

Definiteness requires that the patentee particularly point out and distinctly claim the subject matter in order to provide a “clear warning” as to the patentee’s property rights (**Permutit**). A patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention (**Nautilus**). Definiteness is evaluated from a PHOSITA’s perspective, and it is measured as of the filing date (**Nautilus**).

Here, FRU would argue that just stating “sufficiently elongated to avoid freezing of any fluid” is indefinite as it does not provide parameters for the proper length of the tube. However, Pat could respond that a PHOSITA, familiar with the similar hydrants in the prior art, would be able to fill in the gaps to understand what a sufficient length could be (**Orthokinetics**). FRU could also argue that there are no metes and bounds identifying where the vent should be, but Pat can again argue here that a PHOSITA would know where to place a vent in order to prevent the vacuum effect. Pat will likely survive this challenge.

### (4) Novelty

Under the AIA, there are 3 steps to a novelty analysis. First you have to determine what qualifies as prior art under 102(a). Next, if any prior art falls under the 102(b) exceptions, it must be excluded. Lastly, it must be determined whether a single reference anticipates the invention.

-Pat filed on Jan. 1, 2015, so this is his critical date.

-Potential Prior Art: ‘244 patent, gas cap vents, German catalog, FRU device, and Pat’s own actions, including his prototype and civic association demonstration.

'244 Patent: This patent would be prior art as a patent, under 102(a)(1), clearly before Pat's filing date. However, this reference does not contain all the elements of Pat's claimed invention because it does not have the vent, so it does not anticipate (**Robertson**).

Gas cap vents: These vents have been used on gas caps for a very long time, so it would at least meet the public use 102(a)(1) requirement. However, it clearly does not possess all of the element's found in Pat's claims, as it is just the vent that is relevant.

German catalog: This was circulated in Germany in June 2014, before Pat's filing date, so it is a printed publication under 102(a)(1). This was distributed widely in Germany, so it should be considered publicly accessible as it is still available for copying and displayed on the internet (**Klopfenstein**). No 102(b) exception applies because Pat's first possible public disclosure was in October 2014. For anticipation, Pat would argue that the picture alone is not sufficiently enabling because there is no description about the invention, so a PHOSITA would not understand how to make and use it. FRU would try to argue that a description is not needed, as the picture provides enough guidance. This is a close issue, but I think Pat still might prevail here given the lack of description.

FRU device: FRU developed its prototype on Sept, 1, 2014, but kept it secret until its patent filing on Nov. 1, 2014. Here, the prototype date can't be asserted against Pat because FRU did not make this public or known to anyone (see **WL Gore**). The patent filing date is before Pat's date, so while the patent didn't issue until June 2018, making it ineligible to be considered under 102(a)(1), 102(a)(2) allows the date of the application to count, and this was filed before Pat's application. However, Pat would argue that he publicly disclosed before FRU's filing date when he demonstrated the product in October 2014 at the civic association meeting, knocking out FRU's patent application under 102(b)(2)(B). FRU will argue that Pat's disclosure should not be

considered public use because he maintained control and only showed it to a few people, similar to **Moleculon**. However, Pat will argue that he was no longer experimenting, as the prototype was finished earlier that week, and this was in no way secret, as even a single, non-confidential use in public can constitute public use (**Egbert, Rosaire**). This will be a very important issue, but Pat has a very strong case that he disclosed first.

Pat's own actions: Here, Pat made the prototype on October 1, 2014 and demonstrated it to neighbors, so this likely would be considered public use as even a single, non-confidential use can be public use if the inventor is not experimenting (see **Egbert, Rosaire**). However, this would be exempted under 102(b)(1)(A) as it was made by Pat, the inventor, well within the one-year grace period from his filing date, so it is not prior art.

#### (5) **Obviousness**

Obviousness, evaluated at the time of filing, essentially asks whether a PHOSITA would have found it obvious at the time of the filing date to combine the prior art into the patented elements of the claim. As the Supreme Court reiterated in **KSR**, the five Graham factors must be analyzed to determine obviousness (see **KSR, Graham**).

1. Determine the scope and content of the prior art.

A PHOSITA is assumed to know about all “pertinent” prior art and have it “hanging in the shop” (**Winslow**). Nonanalogous art is not considered for an obviousness analysis. To be analogous art, it must be determined whether (1) the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the same field, whether it is still reasonably pertinent to the particular problem with which the inventor is involved (**Clay**).

'244 patent: Analogous, this is clearly from the same field of endeavor as Pat's device is a wall hydrant just like this.

Gas cap vents: Likely analogous, while this is not from the same field as Pat's invention, it likely is dealing with the same problem of trying to prevent the "vacuum" effect that happens to liquid that Pat's invention also seeks to solve in wall hydrants (**Paulsen**).

Entry in German Catalog: Analogous, this is also a wall hydrant that even has a vent just like Pat's, so it will be in the same field, even if we don't know if the inventor there was trying to solve the same problem as Pat.

2. The differences between the prior art and the claimed invention must be identified.

'244 Patent: Has the elongated tube to avoid freezing, but does not have the vent.

Gas cap vent: Clearly has the vent, but is not applied to freezeless wall hydrants.

German Catalog: Has the vent on the hose bib, but not sure if it has the elongated tube or anything else.

3. Find the level of ordinary skill in the pertinent art

Likely a shop engineer here or anyone who is familiar with fixing pipes, ex: plumber.

4. Determine the obviousness or nonobviousness of the subject matter

A patent which simply arranges old elements to yield predictable results is likely obvious (**KSR**). Further, a patent can be obvious under the "obvious to try" standard if an artisan merely pursues known options from a finite number of identified, predictable solutions (**Kubin**). Thus, if an artisan would have a "reasonable expectation of success" in the deriving the claimed invention, it is likely obvious (**Kubin**).

Here, FRU will argue that Pat's invention was nothing more than common sense, and Pat simply rearranged old elements to achieve a predictable result (**KSR**). The '244 patent already



taught the use of an elongated tube to prevent freezing, and the only problem that arose with that was the vacuum effect keeping water in the tube. Gas cap vents, which have been used for a long time, already taught how to solve this “vacuum” problem, therefore it would have been obvious to try as a PHOSITA had a number of finite, predictable solutions at their disposal to solve this, and there would have been a reasonable expectation of success by combining these elements (**KSR, Kubin**). Further, FRU will argue it was even more obvious after viewing the German catalog hose bib as this already had a vent on it, again showing Pat’s solution would even be more predictable. Nothing Pat did here taught away from the established art (**Adams**). Pat can likely try to argue here that he was not operating with a finite number of solutions, because it would not have been obvious to look to gas caps to solve this problem, so this solution was anything but obvious. Pat would also emphasize that the German reference had no description, so it was not enabling.

#### 5. Secondary considerations

Secondary consideration, which include commercial success, long-felt but unsolved needs, unexpected results, disbelief by experts, failure of others, copying by others, and praise, can also be analyzed. A casual nexus is usually required between the secondary consideration and the claimed invention (**Hybritech**). Pat will likely need to rely on secondary considerations to prove this was not obvious. Pat can argue that this was a long-felt but unsolved need as the problem of pipes bursting has been around for a long time and no one has solved it. Even FRU recognized this problem after hearing an outcry from customers. He can again argue FRU’s product has had commercial success because it addressed this issue that he solved. Pat can also look to see if anyone has praised his invention, and he can say the prior art demonstrates the failure by others to properly create a truly freezeless hydrant. FRU can argue that this was not an unexpected

result that taught away from the prior art and there is no disbelief by experts. Overall, this will be a close issue, but FRU has a very strong argument that invention was obvious in light of the prior art, unless the secondary factors are enough to tip the balance towards Pat.

### **Inequitable Conduct (not sure if proper under Q1 or Q2)**

FRU will likely argue that by not disclosing the German catalog reference to the PTO, Pat engaged in inequitable conduct, thereby causing his entire patent to be invalid (**Therasense**). FRU must prove that the applicant misrepresented or omitted material information with the specific intent to deceive the PTO, and both intent and materiality must be proved by clear and convincing evidence (**Theranesse**). FRU will argue that Pat was aware of the reference during prosecution and intentionally omitted it, which is a strong argument. FRU will also argue that this reference was material, as the hose bib contained the vent, which is essentially the only novel concept of Pat's device, and but-for this omission, Pat wouldn't have been granted the patent. However, Pat will argue that this reference was not material, as there is no description for the picture, so there is no enablement, and it only shows the hose bib, not the entire apparatus, so it could not be material. FRU likely has a strong argument here, but it has a high evidentiary bar to clear.

### **Question 2: Infringement Claims by Patent Owner**

Under 271(a), literal infringement requires that all elements in a claim be present in the allegedly infringing device. First, the claims must be construed by the Court (**Markman**).

The claim language is often the starting point for an infringement analysis (**Yeoman**). The words of a claim are generally given their ordinary and customary meaning, which is the meaning the term would have to a PHOSITA (**Markman**). Other intrinsic evidence, such as the

specification and prosecution history can also be highly relevant in construing a term (**Markman**). Extrinsic evidence can also be used, but only if ambiguities still exist after viewing all intrinsic evidence (**Markman**).

Claim 1: Pat will claim that FRU's product literally meets all of his claim limitations. FRU's device is a freezeless wall hydrant that has a "fluid carrying tube," and a valve plug member on one end with a drain conduit on the other for discharging water. Here, the issues are whether the vent and "sufficiently elongated" tube are met. Pat will argue that claim 1 simply recites a "vent such that no fluid is retained in said tube by vacuum pressurization," and while FRU does not have an additional vent structure (they have holes that allow for venting), Pat's claim 1 does not limit himself to an additional structure, it simply says "vent." FRU can argue that when the claim is viewed in light of the specification, which shows a physical structure extending upwardly in the figure and makes no mention of anything other than an additional vent structure, this is a limitation that must be read into the claim. However, Pat can again argue that these examples from the specification should not be read into the claims and that the independent claim 1 should be given a broader scope than the dependent claim 2 (that says the vent extends upwardly), or else claim 1 would be redundant (**Markman**).

For the "sufficiently elongated to avoid freezing" limitation, Pat will argue that even though the FRU tube is 4" shorter than the traditional anti-freeze hose bibs, this length is still sufficient to prevent freezing of the fluid retained in the structure's water pipes (more facts may be needed here to see if this is the case). FRU can argue there is no literal infringement because perhaps their device operates differently than the traditional anti-freeze devices, therefore they do not possess an "elongated tube," but rather the length of a traditional tube instead.

Even if there is no literal infringement, Pat will still argue for infringement under the Doctrine of Equivalents. A DOE test must proceed on an element-by-element basis, and it is evaluated at the time of infringement (**Warner-Jenkinson**). The triple identity test can be used to determine equivalents (does alleged equivalent serve same function, in same way, for same result?) (see **Warner-Jenkinson, Graver Tank**). Here, Pat will argue for the vent, even if it is an additional structure, using holes to prevent water from being retained by vacuum pressurization achieves the same function (venting air), in substantially the same way (even if there are slight differences in how the vent operates, it still vents air), and for the same result (preventing the vacuum effect). However, FRU can argue that their vents do not work in the same way, as its internal operation of the vent is not the same as Pat's standard one-way vent operation. For the "sufficiently elongated" limitation, Pat will again argue that FRU's tube is sufficient to prevent freezing of fluid even if it is not the same length as his tube because it serves the same function, in the same way, to achieve the same result (preventing freezing). FRU can argue here that these are not equivalents as their tube is not the same length as the traditional anti-freeze pipes, therefore it again does not use the same way (using elongated tubes to prevent freezing) to solve the problem.

Claim 2: This claim is dependent on the first with the only difference being the vent extending upwardly from the elongated tube. This is obviously not literally infringed by FRU because they have holes as the vent, so the same DOE analysis as in claim 1 would apply here for the vent location and structure, as Pat would argue the vent holes are equivalent to an upward vent.

### **Question 3: Pre-AIA**

For novelty, the critical date would not be the filing date, rather it is the date of invention (102(a)). Critical date here: Oct. 1, 2014 (date of Pat's invention, created prototype thereby reducing to practice). Anticipation analysis is the same under the '52 Act.

'244 patent: would still be prior art as the patent was issued before Pat's invention date

Gas Cap vent: Still prior art, in public use before Pat's invention date

Entry in German catalog: Still prior art, before Pat's invention date, and printed publications could still be foreign under the '52 act, it just couldn't be used as "public knowledge or use".

Pat's disclosure at civic association: Can't be used under 102(a) because after invention date, still would be exempted under 102(b) because it's a public use that was within a year of the filing date.

FRU filing in November: Implicates 102(e) because it is a patent application, but it was filed one month after the date of Pat's invention, so FRU would fail here.

Obviousness under the 1952 Act is measured at the time of invention rather than date of filing, but this wouldn't change anything here as FRU filing would still not be considered as prior art.

102(g)(1) interference: implicated because FRU filed first, but Pat can argue he was first to invent, so he should get the patent. Pat conceived of the idea on April 1, 2014, but did not reduce it to practice until October 1, 2014, while FRU conceived of the idea second, but reduced it to practice first, on Sept. 1, 2014. The first to conceive but second to reduce to practice can still win if they show diligence between the period just before the first RTP's conception until second RTP's reduction. This would not be a problem for Pat because he spent six months experimenting in the evenings as he had to work during the day. These were steady, industrious

efforts to create the product, and a six month delay is not long (see **Dow**, holding that a 2.5 year delay is not abandonment). Thus, Pat would likely get the patent here too, but because he was the second to file, he bears the burden of proof in an interference proceeding and will need corroborating evidence (**Barbacid**). No evidence of abandonment, suppression, or concealment by Pat either as filed just a few months after reducing to practice (see **Dow**).

102(f): Likely no derivation because Pat and FRU each invented independently.