

Question 1

Patentable Subject Matter

Pat will not have to worry about a subject matter challenge to the ‘123 patent because his zippered headphones are a patentable manufacture and do not fall into any of § 101’s excluded categories; Pat’s invention is not an abstract idea, law of nature, or physical phenomena. Although Pat’s invention arguably incorporates a law of nature, namely the electrical currents running through the cables, he added an inventive concept by enclosing the cables in a thermo-resistant material and adding zipper teeth.

Utility

Pat’s invention meets § 101’s utility requirement because it has operable, beneficial, and practical utility. A PHOSITA would believe that the invention worked as intended and would not find it inherently unbelievable. Nor is Pat’s invention immoral or mischievous. *Juicy Whip*. Finally, Pat’s invention provides a benefit that is both well-defined (specific) and significant (substantial) because it will allow users to use tangle-free headphones. *Fisher*.

Enablement

In order to overcome an enablement challenge, Pat must disclose to a PHOSITA the manner of making and using the invention in full, clear, concise, and exact terms such that a PHOSITA would not be required to undergo undue experimentation. Enablement allows the PHOSITA to fill in some gaps.

Pat’s specification describes a zipper assembly for connecting two cables together. The PHOSITA would be able to understand what Pat describes without conducting undue experimentation because similar manufactures (such as the zippered

necktie) are well known in the prior art. Similarly, Pat's description of an earphone assembly with an earphone on one end and a jack on the other end is also well known, as evidenced by the fact that Pat's frustration with earbuds drove him to create the invention in the first place.

Pat's specification uses broad language at some points, including "any suitable jack," "any suitable method," "other suitable flexible materials," and "additional types of cables." However, whether experimentation would be undue is analyzed according to the Wands factors: quantity of experimentation necessary, amount of direction provided, presence or absence of working examples, nature of the invention, state of the prior art, relative skill of those in the art, predictability of the art, and breadth of the claims. The breadth of the claims is relatively large because Pat's first claim is not specifically directed to a headphone assembly, but rather to any assembly that incorporates two electrical wires, a thermo-resistant material molding around the wires, and zipper teeth that are molded to the thermo-resistant material. The art is predictable because the concept of attaching cables together via a zipper is well known. The relative skill of those in the art is fairly low and the nature of the invention is not highly sophisticated because it does not take significant technological savvy to connect two cables together via a zipper and the invention is targeted at users of headphones. The prior art contains examples, such as the zippered necktie and shoelaces, that demonstrate how connecting cables together via a zipper works. Pat also provides sufficient direction and working examples because his specification discloses examples for each use of the broad language: "any suitable jack" includes a 6.35mm, 3.5mm, or 2.5mm jack, "any suitable method" could be cast or injection molding, "other suitable flexible materials," could be

fabric, plastic, or foam, and “additional types of cables” includes speaker, A/V, gaming, and computer wires. Therefore, the Wands factors suggest that a PHOSITA who is able to fill in gaps would not have to undergo undue experimentation to make and use Pat’s invention.

Written Description

Written description requires that the inventor had possession of the invention at filing. Less gap-filling is permitted for written description and requires the PHOSITA to conduct a subjective inquiry into whether the inventor actually invented what she claimed to invent. *Gentry Gallery*.

As noted above, Pat’s language is broad, but it is likely that he would be able to survive a written description challenge because his broad language is accompanied by specific examples that show he possessed, for example, multiple embodiments of “any suitable jack” (i.e. 6.35 mm, 3.5mm, and 2.5mm) at the time of filing. While Pat’s description includes multiple examples for much of the broad language, he only specifically claimed the headphone assembly. However, should a situation arise where a competitor uses a similar structure to make, for example, zippered gaming wires, Pat could file a continuation to claim these zippered wires because they are disclosed in his original specification, showing that he possessed them at the time of filing. It is possible that a PHOSITA might believe that Pat did not possess, for example, “any suitable jack” because he disclosed only three possibilities, but Pat could overcome this challenge because he used the word “including,” which demonstrates that other jacks would work.

Definiteness

Definiteness requires that the applicant sufficiently disclose the metes and bounds of the patent in order to inform the public about what may and may not be used during the lifetime of the patent. The claims must specifically point out and distinctly claim the subject matter such that the PHOSITA may understand what is being claimed when the claims are read in light of the specification. A claim is insolubly ambiguous and therefore indefinite if the claim cannot be adequately construed by the PHOSITA in light of the specification and prior art. *Orthokinetics*.

Pat could overcome a definiteness challenge because while his claim 1 is broad, it covers what Pat actually invented: a zipper cable assembly. Broad claims will not be indefinite if the PHOSITA can understand what Pat described in his invention. With knowledge of the prior art and Pat's specification, a PHOSITA would likely understand what Pat's claim language covers and would not find the claims insolubly ambiguous.

Novelty

A § 102 novelty analysis first requires Pat to establish his date of invention because any prior art before that date could potentially anticipate Pat's patent. If Pat can corroborate his RTP, his invention date will be 10/1/2009. If not, his filing date, 1/1/2010, will be his date of invention. Assuming Pat can corroborate the 10/1/2009 invention date, the zippered necktie patent, French magazine ad, and AI's zippered jumper cables could be prior art because they all came before this date. The zippered shoelaces themselves will not count as prior art against Pat both because they were known by others only in France and because there is no indication of corroboration of use that would overcome the presumption of validity afforded to Pat's issued patent. Further,

BS's ZipSpeakers would not count as prior art because they were released after Pat's patent issued and there is no indication that they were in use before July 1, 2013.

In order for these potential references to anticipate Pat's invention, they must have been "known or used by others in this country or patented or described in a printed publication in this or a foreign country" before Pat's invention date *and* must disclose and enable every element of Pat's claimed invention. Knowledge or use by others requires that the prior art be reasonably accessible to the public. In this context, public means non-secret. *Rosaire*. First, the necktie patent will constitute § 102 prior art because it was patented in 1954, well before Pat's invention date. However, the patent will not anticipate Pat's invention because it does not meet the all elements rule. While the patent shows the two sides of the cable connected via a zipper, the necktie contains one long cable, rather than two, and does not contain the electrical wires or thermo-resistant material of Pat's claims.

Next, the French magazine ad constitutes a printed publication in a foreign country that was published on 12/1/2008, before Pat's invention date. Although Friend claims to have seen the product in France in 2007, public use is a domestic inquiry only and there is no indication that the shoelaces were described in a printed publication in France until 12/1/2008, so that is their effective date as a prior art reference. Regardless, the ad does not anticipate Pat's patent. Although the reference depicts two zippered "cables," again, the reference does not contain the electrical wires or a thermo-resistant material of Pat's claims.

AI's zippered jumper cables likely do meet the all-elements rule for claim 1 because they are two electrical wires with surrounding thermo-resistant material that are

connected via zipper teeth attached to the thermo-resistant material. Pat will dispute whether AI's invention meets § 102's requirements. The invention was not patented in the U.S. because AI abandoned the application and it was not published until 6/1/2011, after Pat's 10/1/2009 invention date. However, AI's invention may have been known or used by others in the US because, like in *Rosaire*, AI appears to have been performing the work openly in the course of business; there is no indication that AI attempted to keep his work secret and he completed his prototype before Pat's invention date. Because AI's jumper cables appear to meet all of claim 1's restrictions, Pat would have to argue that the cables should not be prior art at all because they were not reasonably accessible to the public.

Pat's claim 2 is not anticipated by any of the above references because none are directed to a headphone assembly.

§ 102(c)

Pat will not face a § 102(c) challenge because he did not expressly abandon his invention to the public.

§ 102(e)

Pat may face a § 102(e) challenge based on the zippered necktie patent. Because this is a U.S. patent, one may look to either the description or the claims to invalidate Pat's patent. However, Pat could successfully argue that neither the description nor the claims of the necktie patent anticipate his invention because they do not meet all elements of his claim (see above).

§ 102(f)

Pat might also face a § 102(f) challenge because Friend told him about the zippered shoelaces that she saw in France. However, should Friend testify about his conversation with Pat, Pat could argue both that the shoelaces do not embody the subject matter sought to be patented (zippered headphones) and that the presumption of validity afforded to issued patents requires corroboration of testimony by a clear and convincing evidence standard. The prior art would therefore not be fully enabling; the Supreme Court has said that getting the idea from someone else is not enough. *Agawam*.

§ 102(g)

§ 102(g) asks whether before Pat's invention date, the invention was made by another who did not abandon, suppress, or conceal it. § 102(g)(1), which concerns interferences, does not apply here because there is no indication of a patent with claims that overlap with Pat's. However, § 102(g)(2) looks to see whether the invention was made by another in the U.S. As AI's cables are the only reference that meet the all-elements rule, Pat could face a § 102(g)(2) challenge on this basis.

The first to RTP usually wins a § 102(g) race, but the second to RTP could win by showing that he was the first to conceive and that he worked diligently from before the first RTP's conception until his own RTP. Because AI RTP on 9/1/2009 when he completed his prototype and Pat RTP on 10/1/2009 when he completed his prototype, Pat would have to show that he conceived before AI and was diligent. Pat would likely try to argue that his date of conception was 7/1/2008, when Friend told him about the zippered shoelaces and it gave him the idea to make zippered headphones, because this was before AI's conception date of 6/15/2009. However, Pat is unlikely to establish this as his conception date both because it is unclear that he had a definite and permanent idea of the

complete invention in his mind at this time and because he put the invention on the back burner until after AI's conception date, thus negating diligence. Therefore, Pat will likely only be able to establish 7/1/2009 as his date of conception. Despite Pat's later conception and invention dates, however, he would win a 102(g) race because AI abandoned his invention after his RTP.

Statutory Bar

The § 102(b) statutory bar causes the inventor to lose his right to patent his invention if he waits too long to file. If the invention is patented or described in a printed publication anywhere or in public use or on sale in the U.S. more than one year before Pat's filing date, he will be barred. Because Pat filed on 1/1/2010, his critical date is 1/1/2009, meaning that any prior art available before that date will bar Pat. During this one-year period, Pat had a grace period during which his own activity would not bar his right to get a patent. The facts do not suggest that Pat did anything to make his invention publicly known between his invention date and his filing date, but even if he had, the time between these two dates was less than a year so Pat will not be barred by his own activity.

While the French magazine ad was published more than one year before Pat's filing and the zippered necktie patent issued in 1954, these references will not bar Pat under 102(b) because they do not meet all elements of his invention, as established above. Finally, AI's activity does not bar Pat under § 102(b). Although a single use can be public use assuming no agreement of secrecy, the facts do not suggest that AI took any steps to bring his invention to the public, in fact, he did not even manufacture the jumper cables. Even if AI could show public use, Pat could argue both that any public use by AI

was only experimental, testing the invention for quality, and that any public use by AI occurred within Pat's one-year grace period, as AI completed his prototype four months before Pat filed.

Obviousness

Finally, Pat might face an obviousness challenge. An applicant will not receive a patent if the subject matter as a whole would have been obvious at the time of invention to a PHOSITA, assuming that the PHOSITA has ordinary skill and creativity, can fill in gaps, and knows all prior art. *Winslow*. Obviousness requires a five-step inquiry: (1) determine scope and content of prior art, (2) ascertain differences between prior art and claims, (3) find level of ordinary skill in the art, (4) determine obviousness or non-obviousness of subject matter, and (5) consider secondary considerations.

Prior art under § 103 must be within the same field of endeavor or reasonably pertinent to the particular problem the inventor is trying to solve. *Clay*. Pat might argue that none of the § 102 prior art references meet these criteria because they do not attempt to overcome the same problem, namely, preventing headphones from tangling. However, it is likely that the above prior art references, including the zippered necktie patent, zippered jumper cables, and French magazine ad are all from the same field of endeavor in that they all involve a means of connecting two cables (or two ends of the same cable) via zippered teeth.

The differences between the prior art should be enough to overcome an obviousness challenge because while the prior art references discuss connecting cables via a zipper mechanism, none incorporate or suggest use with headphones. Although the PHOSITA, who is likely a person skilled in the art of connecting devices via zippered

teeth, can use common sense and creativity to combine the prior art references, there was nothing in the prior art that would have prompted the PHOSITA to make the leap from zippered jumper cables, shoelaces, and neckties to headphones. However, secondary considerations favor an obviousness finding: Pat had expected and predictable success, given that the facts do not suggest any struggle to make the prototype, and there is no indication that others before him had failed in similar pursuits.

Question 2

BS could face direct infringement claims on the theories of literal infringement and doctrine of equivalents (DOE). Literal infringement means that the infringer, without authority, made, used, offered to sell, or sold the patented invention in the U.S. This requires that every element of Pat's invention match the elements of BS's invention. DOE ensures that infringers do not escape liability for making minor changes to the invention by expanding the patent scope to cover equivalents of claim elements.

Because BS began selling ZipSpeakers after Pat's patent issued, BS will be liable for literal infringement if its device meets the all-elements rule for either or both of claims 1 and 2. BS would thus have to argue that its product does not contain all of the elements of Pat's claims. As to Pat's claim 1, BS's speakers contain two electrical wires as well as zipper teeth connected to rubber shielding to join the two wires. Pat's claim 1 does not say anything about how the wires are connected to either a jack on one end or headphones on the other, so it is likely that BS's first choice (with the two plugs) meets the language of claim 1 and therefore infringes because it contained two electrical wires surrounded by thermo-resistant material with zipper teeth attached to the material and releasably attached to each other. However, BS could argue that its second option (with removed shielding) does not literally infringe claim 1 because the thermo-resistant material is not molded around the electrical wire at the end and the wire is instead exposed. As to claim 2, BS's invention does not literally infringe because its speakers do not use a headphone assembly, but rather full size speakers.

Pat would have a stronger argument that BS's speakers infringe claim 2 under the DOE. For BS to overcome this claim, it would have to argue that its speakers were not an

equivalent of Pat's headphone assembly and that its plugs were not equivalent to the jacks in Pat's claim 2. However, BS would likely lose this argument because its speakers perform the same function (transmit music), use the same way (running current through electrical cables to a device that transmits the music) and have the same result (allow users to hear the music). BS might argue in response that its speakers are not equivalent because the "result" of Pat's headphones is to allow the user to listen to the music without others hearing it, but the results of its invention is to allow everyone within range of the speaker to hear the music (and in fact, BS does not offer an option for headphone jacks).

Even if a court finds that BS literally infringes claim 1 and infringes claim 2 under the DOE, BS has defenses that it can raise. First, it can challenge the validity of Pat's patent on the grounds discussed in Question 1 above. If BS is successful, it will invalidate Pat's patent and infringement would be moot. Second, BS could raise a charge of inequitable conduct that, if successful, would wipe out Pat's entire patent. Inequitable conduct inquires into whether the patentee had a specific intent to deceive by deliberately deciding to withhold a known material reference. To show materiality, the infringer must establish that but for the patentee's failure to disclose a certain reference, he would not have gotten the patent.

Based on the facts, it does not appear that Pat disclosed any prior art during prosecution of his application. However, it is not clear whether Pat had a specific intent to deceive or was willfully blind or if he merely forgot to disclose the prior art (specifically, the French magazine ad and zippered tie patent that BS discovered). BS could point to the fact that Friend told Pat about the zippered shoelaces but that Pat failed to disclose any prior art in connection with the shoelaces, but this would not be enough to

show intent to deceive and it is unlikely that Pat knew about the French magazine ad that BS found. Further, the inequitable conduct argument probably would not be successful because but-for materiality is a difficult standard to meet; BS probably would not be able to show that but for Pat's failure to disclose the prior art, he would not have gotten the patent. Therefore, BS's best bet would be either to challenge the validity of Pat's patent or argue that it did not infringe at all.

Question 3

Users that put a headphone jack on the zippered speaker by using a converter would be directly infringing Pat's patent because they are practicing every element of his claims 1 and 2. The users are using a cable assembly comprised of two electrical wires that are covered in a thermo-resistant shielding and releasably attached by zipper teeth and the cable assembly is a headphone assembly that transmits audio from a jack to headphones. However, BS will not be liable for either active inducement or contributory liability. Although BS knows of the patent (assuming it is the target of an infringement suit), the facts do not suggest that BS knows of the infringing activity or is willfully blind to the activity; it does not appear that BS has taken any steps to induce users to infringe such as advertising, instruction, or component sales with no other use. Further, although BS sells a material component of the invention, this component is arguably a staple article of commerce suitable for substantial non-infringing use because the purpose of the component is to play music out loud with full size speakers, which, presumably, is what most consumers use it for. Therefore, although many users directly infringe Pat's claims 1 and 2, BS will not be secondarily liable for such activity.

Question 4

The AIA eliminates geographic restrictions and replaces the old first-to-invent system with first-to-file. The elimination of geographic restrictions means that public use under § 102 is no longer a domestic inquiry, therefore, if it can be corroborated that the zippered shoelaces were in public use in France, these shoelaces will count as prior art against Pat's patent. Under the new § 102, we ask whether the patentee makes the first disclosure and whether such disclosure was within one year of the patentee's effective filing date. Although Pat made a prototype before filing, the facts do not suggest that Pat did anything to publicly disclose the invention before filing. If he had, and had done so within the one-year grace period, any prior art activity that occurred after his disclosure but before his filing date would not bar his patent.

However, if Pat did not publicly disclose his invention before the filing date, but did not file until December 1, 2013, BS's ZipSpeakers would become prior art because they were placed on sale in July 2013. Because BS's speakers likely infringed if after (see Question 2), they now anticipate because they came before and will invalidate Pat's patent under § 102. The § 103 analysis would also change, because obviousness under the AIA looks to whether something was obvious at the time of filing, rather than the time of invention. This would add the zippered shoelaces (again, assuming corroboration of their use in France) and the ZipSpeakers to the inquiry, and a PHOSITA would almost certainly find Pat's invention obvious with this additional prior art. Therefore, if Pat filed his application under the AIA, it is unlikely that his application would be granted.