

Question 1: Validity

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 cannot be obtained for inventions that merely claim laws of nature, natural phenomena, or abstract ideas. **Chakrabarty**.

A challenger may argue that Patent’s invention is not eligible for patent protection because the invention is claiming heating using a pre-existing chemical mix which is a natural phenomenon. The Court in **Alice** adopted the two-step **Mayo** test to determine whether the subject matter is patentable: (1) does the patent claim a patent-ineligible law of nature, natural phenomena, or abstract ideas? (2) If so, does the claim contain an inventive concept sufficient to transform that ineligible law of nature, natural phenomena, or abstract idea into a patent-eligible application of the ineligible subject matter?

A challenger will argue that Pat’s invention is nothing more than a natural phenomenon because the heat is created by mixing chemicals that Pat did not produce or combine. However, even if Pat cannot succeed under the first part of the **Mayo** test, Pat can overcome the second part of the test because using the handwarmers to heat the inside of a glove is an inventive concept sufficient to change the natural phenomena into patent-eligible subject matter. Therefore, Pat’s subject matter is valid, and a challenger could not defeat Pat on this claim.

Utility

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

Beneficial (moral) utility bars inventions that are injurious to the well-being or sound morals of society. **Juicy Whip**. While a challenger could argue that Pat's invention is not an improvement on the prior art, an invention does not need to be an improvement to satisfy beneficial utility. **Lowell**. A challenger would have difficulty proving Pat's invention lacks beneficial utility because it was developed for the purpose of keeping users' hands warm. Additionally, a challenger to this patent, like Mitten World or Metsy, would have a difficult time proving Pat's invention lacks beneficial utility because the Mitten World and Metsy devices are also for helping users keep their hands warm. Therefore, Pat's invention has beneficial utility.

Practical utility requires that the invention possess a specific and substantial use. A specific use is a use that is well-defined and has a particular benefit to the public. **Fisher**. Here, the specific use is that the public can use Pat's device to keep their hands warm in cold weather. A challenger may argue that because the device was created for baseball gloves, Pat's invention does not serve a specific use to the public but is useful for baseball players exclusively. However, Pat would argue that although his initial design was towards baseball gloves, this concept is transferable for a variety of glove types and can serve a greater number of the public. A substantial use requires having a significant and presently available benefit. **Fisher**. A challenger would argue against substantial use because there is no indication that Pat has begun manufacturing and selling the product, so the benefit is not presently available to the public. However, Pat would argue that he has made a prototype so the device itself is available and that the information disclosed in the specification is sufficient to allow for the making and use of the invention, so it is presently available to the public. Therefore, Pat's invention possesses practical utility.

Operable utility requires that the invention not be inherently unbelievable, which is a low threshold to meet. The presumption is that inventions are not so fantastic as to warrant a credible utility rejection. This presumption has not been overcome here because Pat's invention does not have a utility-negative mistake and is not inherently unbelievable. **Janssen**. If a challenger would argue that Pat's invention is inoperable, Pat would point to the previous references in the field that discuss using handwarmers in conjunction with gloves to show that his invention is not inherently unbelievable.

Disclosure: Enablement, Written Description, and Definiteness

Under § 112, a patent specification must contain a written description of the invention and the manner and process of making and using it in such full, clear, concise, and exact terms to enable a PHOSITA to make and use the invention.

A. Enablement

Enablement asks if the specification allows a PHOSITA to make and use the invention without undue experimentation. **Incandescent Lamp**. The claim scope must be enabled at the time of the application in relation to the technology available at the time of application. The broader the claim, the less likely the claim is to be enabled. However, if the state of the art is advanced and the PHOSITA is knowledgeable, enablement is more likely. The PHOSITA may use gap fillers to fill any gaps in the description. The factors in **Wands** used to determine undue experimentation are: (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.

A challenger would argue that the claims are too broad and therefore subject a PHOSITA to undue experimentation to make and use the invention. For example, the specification does not indicate the type or size of “hand warmer” to be used or what type of “inner layer” material should be used. Additionally, a challenger would argue that Claim 1(c) is too broad because a “means for allowing heat to travel” could be done a number of ways and a PHOSITA would need to engage in undue experimentation to determine how to do so.

Pat would argue that a PHOSITA would not need to engage in undue experimentation. First, Pat would point to the specification which describes how heat moves from the hand warmer to the fingertips. Second, Pat would reference Figures 1 and 2 that illustrate the movement of heat. Additionally, Pat would argue that because the state of the art around keeping hands warm is advanced as seen by prior patents and products and not a new field. Therefore, a PHOSITA would realistically know how this works or easily reference prior art to fill any gaps. Additionally, gloves and mittens have been around for a long time so the “inner layer” material would not be considered too broad because the field surrounding this is not new and is predictable.

B. Written Description

The written description must demonstrate to a PHOSITA that the inventor had possession of the claimed subject matter at the time of filing. **Ariad v. Eli Lilly, Gentry Gallery**. A written description problem occurs if the applicant tries to amend existing claims, add new claims (neither of which are at issue here), or claimed the invention too broadly. Actual reduction to practice is not required to satisfy written description. The level of detail required to satisfy written description depends on the nature and scope of the claims. **Ariad/Gentry**.

When looking within the four corners of the specification, a challenger would argue that “hand warmer” is not adequately described in the claims or specification and therefore, Pat did not possess either a chemical or electric hand warmer at the time of filing. Pat would argue that a PHOSITA possesses knowledge about the field of hand warming devices and based on this knowledge, would recognize that a “hand warmer” includes both a chemical and electric heater.

A challenger might also argue that if Pat decides to produce this invention using a glove or mitten that is not a baseball glove, he is limited to creating the outer layer out of the “leather material” described in the specification and did not possess other materials at the time of filing. However, Pat would argue that the claim reads “an outer layer of material,” and the specification contains examples of embodiments, and those limitations should not be read into the claims.

C. Definiteness

Definiteness requires that the patentee particularly point out and distinctly claim the subject matter to prove a “clear warning” as to the patentee’s property rights so that others can easily discern the boundaries of legal rights. **Permutit**. A patent is invalid for indefiniteness if its claims, read considering the specification and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention. **Nautilus**. Absolute precision is not necessary, and definiteness is analyzed from the perspective of a PHOSITA. **Nautilus**.

A challenger would argue that the specification does not include any size or spacing measurements for the glove portion or material types for the inner material or stiff support members. For the size and spacing, Pat will point to **Nautilus**, because like in **Nautilus**, a PHOSITA could determine the approximate distance for the portions of the glove based on the

hand of a user. For the material types, a PHOSITA can gap fill and look to the extensive glove/mitten prior art to easily determine an appropriate material.

A challenger would argue that Claim 1(c) is a means-plus-function claim as indicated by the word “means” and is indefinite. While means-plus-function is allowed, the element will be construed to only cover the structure described in the specification. A challenger, based on this, would argue that Pat is limited by the explanation of the heat movement in his specification.

Novelty (102)

Under the § 102, there are three steps to determine whether claimed subject matter is novel. (1) Determining what qualifies as prior art under §102(a). (2) Excluding prior art if it falls under 102(b). (3) Determining whether a single reference anticipates the invention. Under the AIA, the critical date is the date of filing, which is January 1, 2021.

(1) Potential Prior Art

Under § 102(a)(1), if the claimed invention is patented, described in a printed publication, in public use, on sale, or otherwise available to the public anywhere in the world before the effective filing date, it is prior art. Additionally, under §102(a)(2), if the claimed invention is described in a United States patent or patent application before the filing date, it also count as prior art.

Amazon Advertisement: The Amazon advertisement is considered prior art under §102(a)(1) given that it is sufficiently described. Pat may argue that the image does not sufficiently describe the process and is not prior art. The advertisement is from February 2020 and is before Pat’s filing date so it would be considered prior art.

Chinese invention: The Chinese application became prior art under §102(a)(1) as a printed publication as of the date it was published in China: July 1, 2020. This date is before Pat's filing date so the Chinese application would be considered prior art.

Gloves with Wires: This ad is prior art as described in a printed publication and on sale under §102(a)(1). The advertisement included a detailed description about the glove, so the ad is likely sufficiently descriptive. The date of the ad is December 1, 2020, which is before Pat's filing date, so it is considered prior art.

Pat's Use: Pat completed his prototype on November 1, 2020, and used the gloves during team practice. A challenger would argue that Pat using the gloves at practice constitutes a public use.

Moleculon. Pat would argue that since there was only one prototype and no evidence that his teammates used the glove, the invention was still within Pat's control. **Beachcomers**. Because the public use was before his filing date, Pat's public use may be considered prior art unless an exception applies.

Mitten World/Metsy: These products entered the market while Pat developed. If on sale before filing, prior art.

(2) Excluded Prior Art

Under §102(b), there is a one year grace period for disclosures made less than 1 year before the filing date by the inventor, a joint inventor, or another person who obtained the subject matter directly or indirectly from the inventor. After such a disclosure, disclosures that come after will not count as prior art.

Amazon Advertisement: No exception applies.

Chinese invention: No exception applies.

Gloves with Wires: No exception applies.

Pat's Use: Regardless of whether Pat's use was public, § 102(b) applies and Pat's prior use is excluded from the list of prior art. Pat's use will be excluded from further analysis of prior art.

(3) Anticipation?

Anticipation requires that every element in a claim is found expressly or inherently described in a single prior art reference. Prior art from any field can be used for anticipation and the prior art must be enabling. **Hafner**. Here, the elements of independent Claim 1 are (A) an inner layer of material, placed around a hand and fingers, forming a sealable top pocket to hold the hand warmer and ducts, each duct extending from the top pocket over each finger; (B) an outer layer of material placed around the inner layer to form the heated glove; and (C) means for allowing heat to travel from the hand warm to top of each fingertip of the hand in the heated glove. The elements of dependent Claim 2 (A) the means for allowing heat to travel from Claim 1; and (B) stiff support members, each stiff support member placed between the top layer and bottom layer of the ducts to keep the duct open so that the heat can travel along the duct to heat the top of the fingertips of the hand.

Amazon Advertisement: The Amazon advertisement shows a handwarmer being inserted into a glove. The ad does not have an inner layer forming a sealable top pocket to hold the handwarmer (Claim 1, Element A) because the handwarmer is placed directly into the glove and not between an inner layer and an outer layer. Additionally, the advertisement does not describe whether the heat travels to the fingertips of the hand, therefore not anticipating Element C of Claim 1 or Claim 2. Therefore, the Amazon advertisement does not anticipate Pat's invention.

Chinese invention: The Chinese application contains a pouch that holds a “warming device” but there is no indication that the pouch is “sealable” like in Claim 1(A) of Pat’s invention.

Additionally, Claim 1(C) and Claim 2 are not anticipated by the Chinese application because there is no indication of the heat traveling to the fingertips. In fact, Pat has a good argument that heat does not travel to the fingertips because the fingers are exposed in the hand covering device in the Chinese application.

Gloves with Wires: This device has both an inner layer and an outer layer like in Pat’s invention and has wires that extend the heat to the fingertips. However, this device does not anticipate Pat’s invention because in Pat’s invention, the handwarmer is placed inside the glove itself. In this device, the battery, which provides the heat to the wires, is placed outside the glove and somewhere on the wearer’s body.

Obviousness (103)

Under §103, a patent may not be obtained if the claimed invention would be obvious to a PHOSITA considering the prior art before the effective filing date. Obviousness only uses pertinent references in analogous arts. Prior art is analogous if it is from the same field or if it is pertinent to the particular problem the inventor is solving. **Clay/Cook**. The five Graham factors, discussed in **KSR**, are used to make an obviousness determination: (1) determining the scope and content of the prior art, (2) ascertaining the differences between the prior art and the claims at issue, (3) finding the level of ordinary skill in the art, (4) determining the obviousness or non-obviousness of the subject matter, and (5) looking at secondary considerations if necessary.

- (1) Determine the scope and content of the prior art

Amazon Ad: Within the field of using handwarmers with gloves to heat hands - analogous.

Chinese Invention: Within the field of using handwarmers with gloves to heat hands - analogous.

Gloves with Wires: Within the field of heating hands through gloves – analogous

(2) Identify the differences between the prior art and the claimed invention.

See the Anticipation analysis above.

(3) Determine the PHOSITA

The PHOSITA is an engineer with knowledge of heating systems and some experience with sewing.

(4) Determine the obviousness or nonobviousness of the subject matter

A challenger will argue that Pat's invention is an obvious modification of the gloves with wires product. As discussed above, the gloves with wires product have electric coils placed between two layers of fabric that heat up and provide heat from the back of the hand to fingertips.

However, this product, unlike Pat's invention, does not contain all the heating components within the glove because this product requires the user to wear the battery externally to the glove.

A challenger would argue that a PHOSITA knows how to fill in the gaps and place the battery within the pocket in the glove. The Amazon ad and Chinese application both teach placing a handwarmer inside the glove so adding this modification to the gloves with wires product would be considered obvious to try. Based on these arguments, claim 1 of Pat's patent is likely obvious.

However, Pat's second claim is likely not obvious because none of the prior art references have ducts that must remain open for movement of heat. This would not be obvious based on the gloves with wires product because the wires run down each finger and therefore provide direct heat to the fingers whereas the heat from Pat's invention radiates from the center so therefore it is

imperative the ducts over the fingers stay open, so the heat reaches the fingers. Therefore, Claim 2 is likely not obvious.

(5) Secondary considerations

Pat may argue that his invention provides a solution for a “long-felt but unsolved need” especially for baseball players. While secondary considerations are not dispositive to the obviousness analysis, this may help Pat’s argument against obviousness.

Question 2: Infringement

Under § 271(a), whoever without authority makes, uses, offers, or sells any patented invention infringes on the patent.

A. Mitten World

Literal Infringement

Pat will argue that Mitten World literally infringed the ‘123 patent under § 271(a). Literal infringement requires all elements to be present in the allegedly infringing device.

First, an infringement analysis requires that the claims be construed. **Markman**. Claim terms are generally given their ordinary and customary meaning, which is the meaning a PHOSITA would give to the term. **Markman**. Other intrinsic evidence, such as the specification and prosecution history, can also be relevant in construing a term. **Markman**. Extrinsic evidence can also be used, but only if the terms are still ambiguous after looking at all the intrinsic evidence.

Markman.

(1) Claim 1

For claim construction, Pat will argue that “a hand warmer” includes both electrical and chemical heating devices. Additionally, Pat will argue that “top pocket” indicates the pocket is located on the backside of the hand and fingers. Pat will argue that Mitten World is “utilizing a hand warmer,” which although is in the preamble, is limiting because it breathes life into the claim. However, Mitten World will argue that the preamble is not limiting, and this limitation should be read in.

For Element A, Mitten World likely does not literally infringe because the Mitten World product does not contain an inner layer that creates a pocket; the handwarmer is placed directly on the back of the user’s hand between the hand and the inside of the glove. For Element B, Mitten World does have an outer layer that is pulled over the fingers to form a glove. Therefore, this element is likely literally infringed. Lastly, Mitten World may be found to have a means for allowing heat to travel to the fingertips, Element C, because the outer layer is pulled over the fingertips. However, because Element A is not infringed, it is unlikely that Mitten World literally infringes Claim 1 of the ‘123 patent.

(2) Claim 2

It is unlikely that Mitten World literally infringes Claim 2 because the Mitten World product does not have any stiff support members.

Doctrine of Equivalents

Even if there is no literal infringement, Pat can argue for infringement under the Doctrine of Equivalents. A Doctrine of Equivalents, DOE, analysis is done on an element-by-element basis and is evaluated at the time of the infringement. **Warner-Jenkinson**. A three part test is applied to determine infringement under DOE: determine whether the alleged product does the same

thing in the same way to accomplish substantially the same result as the patent. (function, way, result test) **Graver Tank**. Pat may have an argument that Claim 1 is infringed by DOE. Under the function, way, result test, Pat can argue that Mitten World's suggestion of placing a handwarmer in a glove to heat a user's fingertips does the same work of heating a user's hands in substantially the same way (placing a handwarmer in a glove) to achieve the same result (heating a user's hands). However, Mitten World will likely argue that adding the handwarmer is only a suggestion and not a part of their invention. It will be more difficult to bring a DOE claim for Claim 2 because Mitten World does not have stiff support members or an element that functions in a similar way to ensure heat travels from the handwarmer to the fingertips; in fact, the inner part of the glove does not even extend to cover the user's fingers.

B. Metsy

Literal Infringement

Pat will argue that Metsy literally infringed the '123 patent under § 271(a).

(1) Claim 1

For claim construction, Pat will again argue that "a handwarmer" includes both electrical and chemical handwarmers because Metsy uses a chemical handwarmer. For Element A, the Metsy product does contain an inner layer of material placed around the hand and fingers, but the outer layer contains the pocket for a hand warmer. Additionally, there are no ducts. Therefore, Element A is not literally infringed. For Element B, the Metsy product does contain an outer layer that is placed around the inner layer. While the outer layer and inner layer are different between the '123 patent and the Metsy product, the Metsy product literally contains an outer layer that is placed over the inner layer. Therefore, Element B is literally infringed. For Element C, the Metsy

product contains a hand warmer near the tips of the finger so therefore heat does travel from the handwarmer to the fingertips. Therefore, Element C is literally infringed. It is unlikely that Metsy literally infringes Claim 1 of Pat's product because Element A is not infringed, and all elements are required to be infringed for literal infringement.

(2) Claim 2

It is unlikely that Metsy literally infringes Claim 2 because the Metsy product does not have any stiff support members.

DOE

Pat has an argument that Claim 1 is infringed by DOE. Under the function, way, result test, Pat can argue that Metsy's use of a chemical handwarmer in a pocket within the glove to heat a user's fingertips does the same work of heating a user's hands in substantially the same way (with a handwarmer in a glove) to achieve the same result (heating a user's hands). Therefore, Pat's DOE infringement argument for Claim 1 is likely successful. It will be more difficult to bring a DOE claim for Claim 2 because Metsy does not have stiff support members or an element that functions in a similar way to ensure heat travels from the handwarmer to the fingertips. Additionally, in Metsy, the handwarmer is located by the fingertips which even further hurts Pat's argument of DOE for Claim 2.

Question 3: Contributory/Induced Infringement

It is possible that Mitten World may be liable as an infringer for indirectly infringing the product. For an individual to be liable for indirect infringement, there must be (1) direct

infringement by another; and either (2) active inducement or (3) contributory infringement. For inducement under § 271(b), whoever actively induces infringement of a patent shall be liable as an infringer. Inducement requires (1) intent which may be willful blindness and (2) providing instructions or aid. **Global Tech**. Knowledge that the induced acts constitute patent infringement is required, which Mitten World has. **Commill**. For contributory infringement under § 271(c), whoever offers to sell or sells part of a patented product knowing it to be for infringement of the patent is liable as a contributory infringer. Contributory infringement requires (1) knowledge of infringing behavior; (2) contributory acts; and (3) no substantial non-infringing use.

Mitten World may be liable for inducement because Mitten World knows about the '123 patent and is suggesting user use a handwarmer with their product which could lead to users infringing the '123 patent. However, direct infringement by another **must** occur for Mitten World to be liable for inducement and based on the reasoning above, Pat likely does not have a literal infringement claim and does not have a strong DOE claim. Therefore, Mitten World can argue they are not indirectly infringing because there is no direct infringement by their customers.

Mitten World is likely not liable for contributory infringement because they are not selling any handwarmer but are merely suggesting a user may use it with their product. This suggestion would not constitute an offer to sell under § 271(c).

Question 4: '52 Act

Novelty

Pat's new critical date is November 1, 2020, because this is his date of invention which is the date of reduction to practice.

Amazon Advertisement: Still prior art under 102(a)

Chinese Application: The Chinese Application is no longer prior art under the '52 Act because the application was not filed in the United States and therefore not disclosed in a US application under 102(e).

Gloves with Wires: Still prior art under 102(a)

Pat's Disclosure: Still excluded as prior art under 102(b).

The novelty analysis remains the same under the '52 Act.

There is likely no 102(f) issue because there is no indication that Pat derived the idea from someone else.

There is likely no 102(g) issue because Pat timely filed his application about 3 months after completing his prototype.

Obviousness

Under the '52 Act, a patent will not be granted if it is obvious as of the time of invention. The obviousness analysis under '52 Act likely weighs more in favor of Pat because the Chinese Application is no longer prior art.