

Patent Law
Fall 2017
Prof. Ford

Take-home Midterm Exam

This take-home midterm exam is worth 25% of your course grade. It will be distributed on Thursday, October 12, and is due at **noon on Monday, October 16**. By that time, you must return **two printed copies** of your exam responses to the Registrar's Office. **Late exams will result in an automatic reduction of your course grade by one-third letter grade per day.** Please do not put your name or any identifying information on your exam. Instead, place only your assigned exam number on the top right corner of your answers.

I expect all exam responses to be typed. **Format your responses similarly to this document: single-spaced, with 1.5-inch margins, and empty space between paragraphs.** Staple each copy of your responses at the top left corner of the page. Use 12-point Century, Palatino, Constantia, Book Antiqua, Cambria, or another high-quality proportionally spaced body-text font; please do *not* use Times New Roman. Number your pages.

Because you have flexibility within the week of when to complete the exam, other students may be completing this exam before or after you do so. **Accordingly, you must not discuss the exam with anyone, student or not, until I tell you that every student has turned in his or her exam.** Additionally, I will not be able to answer any questions about the exam while it is in progress. You may use any materials you wish while completing this exam.

This exam consists of **two parts**, each worth half of the grade. This exam has strict time and word limits. You must not spend more than **four hours** completing this exam (I expect you will need less time than that), and you must not use more than **400 words per part**. Please list your word count for each part after your responses to that part. Please also type at the top of your exam the following sentences:

I affirm that I have not discussed this exam with other students or anyone else during its administration. I further affirm that I understand and have complied with the word and time limits governing this exam.

Good luck!

Part 1 (400 words maximum)

For each scenario, apply 35 U.S.C. § 102 to answer the given question. Be sure to analyze each piece of potential prior art, even if one is dispositive. Do not consider obviousness or other doctrines that might affect patentability.

Scenario A:

- February 12, 2006: Lydia files a patent application in Germany describing and claiming a novel method for synthesizing an existing pharmaceutical compound. (Lydia's application does not designate any other countries under the Patent Cooperation Treaty.)
- February 15–March 4, 2006: Walter independently conceives of the same process and, after considerable work, reduces it to practice.
- March 18–26, 2006: Walter uses the process to prepare substantial quantities of the pharmaceutical compound for commercial sale.
- April 1, 2006: Walter's pharmaceutical compound is first sold to the public by contract salespersons in the American Southwest.
- March 28, 2007: Walter files a U.S. patent application describing and claiming the method.
- June 10, 2007: Lydia receives a German patent covering the method; her application is published at the same time.

Can Walter receive a patent on the method? Explain.

Scenario B:

- December 1, 2015: Kim, a lawyer, invents a secure rolling file cart by modifying an existing cart with a novel locking apparatus.
- January–March, 2016: Kim routinely uses the cart to carry files into and out of court appearances and meetings with clients and opposing counsel.
- March 8, 2016: Jimmy, a lawyer for an office-supply company, sees Kim's cart and takes several photos of it while Kim isn't looking. He sends the photos to colleagues, who decide they should build and sell a similar cart.
- April 8, 2016: Kim's cart breaks, due to a design flaw, and she stops using it for several months. She tries to fix it but gives up after a few hours.
- October 14, 2016: Jimmy's company starts selling a cart identical to Kim's design. Kim sees it in a store and decides to seek a patent.
- November 21, 2016: Kim files a U.S. patent application claiming her cart.

Can Kim receive a patent on the file cart? Explain.

Part 2 (400 words maximum)

Chris, a chemist, specializes in developing new fertilizers, which are additives that promote plant growth. One day, she comes to you, her patent lawyer, and explains that she has developed a promising new type of extended-release fertilizer mixture. The fertilizer mixture is formed into small granules that dissolve over time in the ground, releasing the active ingredients into the soil as they dissolve. This lets gardeners and farmers apply the fertilizer mixture less frequently, saving work and guarding against over-fertilization.

The fertilizer mixture has three components:

- The majority of the mixture is composed of any of several conventional nitrogen-rich chemical fertilizers. There are about 20 of these chemicals well known to those of ordinary skill in the art.
- The mixture also contains a small amount of live nitrogen-fixation bacteria, which helps ensure that certain types of plants can absorb the nitrogen from the chemical fertilizer. There are also about 20 of these bacteria, also well known to those of ordinary skill in the art.
- The mixture is held together in small granules by a wax or resin acting as a binding agent.

Each of these components is known in the prior art, but they have not been used together in this way.

Chris tells you that she has tested several embodiments of her invention, with mixed but promising results. She was able to get some of her mixtures working by varying the specific chemical fertilizer and bacteria used in that mixture, along with the quantities of the three components, but several others mixtures did not work. All in all, she has tried a total of 22 mixtures, using three different chemical fertilizers and four different bacteria with different quantities of the ingredients; of those 22 experiments, six worked well. (All of her experiments used common beeswax as the binding agent.)

Chris tells you that she has not been able to figure out what causes certain mixtures to work and others not to work. It seems to go better if the proportion of chemical fertilizer is about 50–70% by weight and if the proportion of bacteria is under 5%, but this does not explain all her results; sometimes mixtures with other percentages worked, and sometimes ones with percentages in those ranges didn't work. She suspects that some combinations of a specific chemical fertilizer with a specific nitrogen-fixation bacteria may not work because the two somehow inhibit each other.

You begin to draft a patent application with the following lead claim:

1. An extended-release fertilizer compound, comprising:
 - (a) approximately 40–70% of a nitrogen-rich chemical fertilizer;
 - (b) approximately 1–10% of a nitrogen-fixation bacteria; and
 - (c) approximately 20–60% of a wax or resin;

wherein the compound has been formed into granules approximately 0.5–1.0 mm in diameter; and

wherein the compound is configured to release said nitrogen-rich chemical fertilizer and said nitrogen-fixation bacteria into soil and act as a fertilizer over an extended period of time.

Assess the risk that this claim will face problems under the written-description and enablement requirements of § 112. If there are facts that you do not know that would help you assess these requirements, explain what those facts are and how they would affect your analysis.