

Patent Law  
Spring 2015  
Prof. Ford

**Take-Home Final Exam**

This in-class final exam is worth 60% of your course grade. It will be administered on Thursday, May 7, 2015. You have eight hours to complete the exam (or twelve hours if you have been granted an accommodation by the Registrar's Office). At the conclusion of the exam, responses must be emailed to the Registrar's Office at [registrar@law.unh.edu](mailto:registrar@law.unh.edu).

**Please do not put your name or any identifying information on your exam.** Place only your assigned exam number on the top right corner of your answers.

Please format your responses similarly to this document: **single-spaced, with 1.5-inch margins, and empty space between paragraphs.** Use 12-point Century, Palatino, Constantia, Book Antiqua, or Cambria; please do *not* use Times New Roman. Number your pages.

You may consult **any existing material** you wish while completing this exam. This specifically includes online research tools like Google and Lexis, though I do not recommend relying on such tools. Answers discussing cases, doctrine, and principles that were not assigned or discussed in this course will receive no credit. **You may *not* discuss the exam with anyone else while it is being administered,** including other students, attorneys, or participants on online discussion boards. Please type at the top of your exam the following sentence:

*I affirm that I have not discussed this exam with other students or anyone else during its administration.*

This exam consists of **nine short-answer questions**, which are each worth 10% of the grade; the final 10% will look to organization and compliance with the instructions. All questions are directed to doctrine; there is no need to discuss policy considerations. **There is a total word limit of 2,500 words for your entire exam.** This is a generous limit; you do not need to use this many words, and concise and well-organized responses will be rewarded. **Please list your word count at the end of your exam.**

If any of the questions are unclear, or don't provide necessary information, state explicitly any assumptions you make and explain how your answer depends on those assumptions.

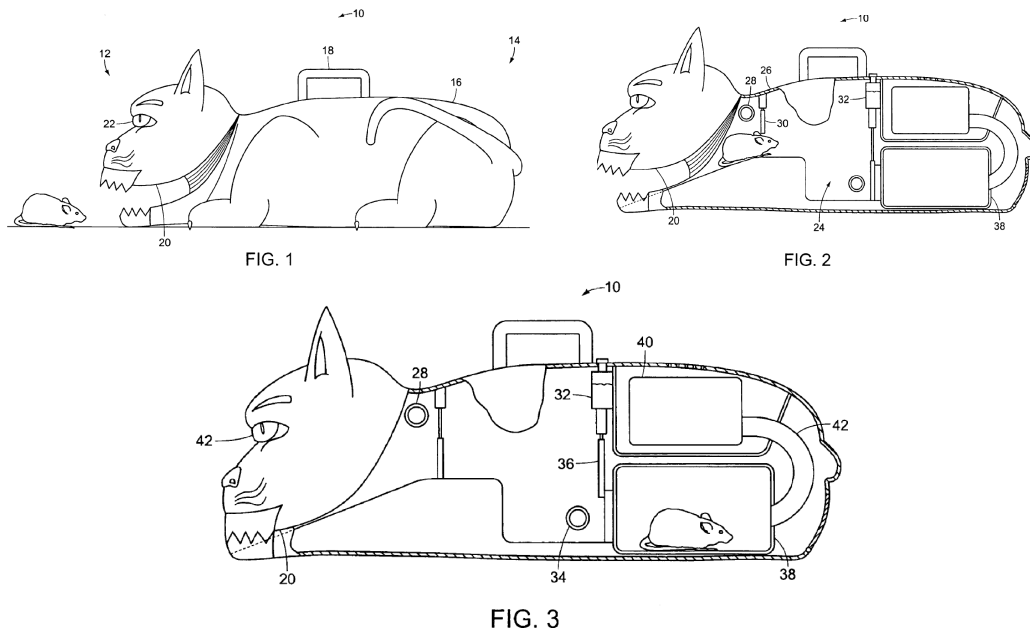
Good luck!

**The following scenario applies to all questions:**

Stella Macalister filed a patent application claiming a new mousetrap. The abstract described the invention as follows:

An electronic mousetrap captures mice, rats, and other small mammals. The mousetrap includes a scent emitter for attracting mice into the device, a chamber for holding captured mice, and a vacuum apparatus for drawing mice into the chamber. The mousetrap allows a user to trap a mouse without harming it, and permits subsequent release of the mouse into the wild. The mousetrap improves on a conventional mousetrap by permitting the removal and release of mice and similar pests without having to handle animal remains.

The design is shown in the figures of Macalister's patent application:



The application contained the following written description, all of which was unchanged during prosecution and became part of the patent's specification:

The present invention provides a trap for mice, rats, and other small mammals. The invention employs a humane electronic trap with a chamber to hold captured animals without killing them, so they can be released into the wild. The invention provides an improved trap that avoids the problems associated with conventional traps, including decaying animal carcasses and disposal of animal remains.

It is an object of this invention to provide an attractive trap for mice, rats, and other small animals that can be easily transported and placed by the user. The invention accomplishes this object by providing an attractive cat-shaped housing 16 and a convenient handle 18.

It is a further object of the invention to provide a humane trap. The invention accomplishes this object by providing a chamber 38 to hold captured animals; a vacuum pump 40, connected to the chamber 38 by hose 42, to gently suck animals into the chamber; and a door 36, operated by motion sensor 34, to allow animals to enter the chamber 38 and hold them in the chamber.

It is a further object of the invention to provide a mechanism for informing the user that an animal has been captured and is ready for release. The invention accomplishes this object by providing a door 30 and motion sensor 28, which detect when an animal has entered the chamber as shown in Figure 2. The invention further accomplishes this goal by providing a mechanism 20 for automated opening and closing of a flexibly opening mouth and a pair of eyes 42 which glow when an animal has been captured.

It is a further object of the invention to provide an attractive scent to draw animals into the trap. The invention accomplishes this object by providing a pump and tank apparatus 32 that gradually releases an animal-attracting scent. The animal-attracting scent can be any liquid, aerosol, or gaseous material suitable for attracting small animals.

The original application, filed on July 15, 2012, contained five claims:

1. A mousetrap comprising:
  - an enclosure;
  - a chamber for holding captured mice; and
  - a vacuum for drawing mice into the chamber.
2. The mousetrap of claim 1, further comprising:
  - a scent-releasing mechanism; and
  - a scent suitable for attracting mice.
3. The mousetrap of claim 1, in which the vacuum is configured to draw mice into the chamber without killing them.
4. The mousetrap of claim 1, in which the enclosure is cat-shaped.
5. The mousetrap of claim 4, further comprising a flexibly opening mouth operated by an electronic sensor.

The patent issued on August 23, 2014, and contained six claims (differences underlined):

1. A mousetrap comprising:
  - an enclosure;
  - a chamber for holding captured small animals; and
  - a vacuum for drawing small animals into the chamber.
2. The mousetrap of claim 1, further comprising means for releasing a scent suitable for attracting small animals.
3. The mousetrap of claim 1, in which the vacuum is configured to draw small animals into the chamber without killing them.
4. The mousetrap of claim 1, in which the enclosure is made of plastic and takes the form of a cat.
5. The mousetrap of claim 4, further comprising:
  - a flexibly opening mouth;
  - an electronic sensor configured to detect when a small animal has entered the mouth; and
  - means for opening and closing the flexibly opening mouth in response to a signal from the electronic sensor.
6. The mousetrap of claim 1, further comprising a lubricating coating on the inner surface of the enclosure to prevent a captured small animal from escaping.

### **Question 1**

Macalister is concerned that, because of the amendments to the claims, the doctrine of prosecution history estoppel will apply and she will be unable to obtain the benefit of the doctrine of equivalents, significantly limiting the scope of the patent's claims. Evaluate the risk for claim 1 and claim 4.

### **Question 2**

Macalister is also concerned that, because amended claims and claims that were not part of the original application are not part of the original disclosure, some of the claims may be invalid under 35 U.S.C. § 112 for failing to satisfy the written-description requirement. Evaluate the risk for claim 5 and claim 6.

### Question 3

Macalister's mousetrap has succeeded in the marketplace and attracted competition. One competitor, Jun Chang, has identified a problem with Macalister's mousetrap: Once captured, mice desperately try to escape. Chang has solved this problem by placing a small piece of cheese inside the chamber, not to attract mice into the chamber, but to distract and occupy them once they are trapped. Other than the cheese, Chang's mousetrap is identical the design shown in the figures of Macalister's patent.

Can Chang patent her improved mousetrap, in view of the Macalister patent? Explain.

### Question 4

Can Chang sell her improved mousetrap (the one with cheese in it) without infringing the Macalister patent? Would it change your answer if Chang bought Macalister's mousetraps on the open market, added cheese, and then resold them? Explain.

### Question 5

Another competitor, Tarik Carlsson, has identified a different problem with Macalister's mousetrap: Sometimes, when users forget to empty the trap, a mouse will gradually suffocate in the chamber. To solve this problem, Carlsson substituted a stronger vacuum pump that kills the mouse within 15 seconds. Other than the stronger vacuum pump, Carlsson's mousetrap is identical the design shown in the figures of Macalister's patent.

Does Carlsson's mousetrap infringe claim 1 of the Macalister patent, either literally or under the doctrine of equivalents? Explain.

### Question 6

Carlsson applied for a patent on his improved mousetrap, with an effective filing date of April 2, 2014. Is each of these relevant prior art under § 102? Explain.

- a. The Macalister patent application?
- b. The Macalister mousetrap, purchased at a Target store in Manchester, New Hampshire, on March 15, 2014?
- c. The Carlsson mousetrap, shown at a retail-industry convention in New York on November 12, 2013?

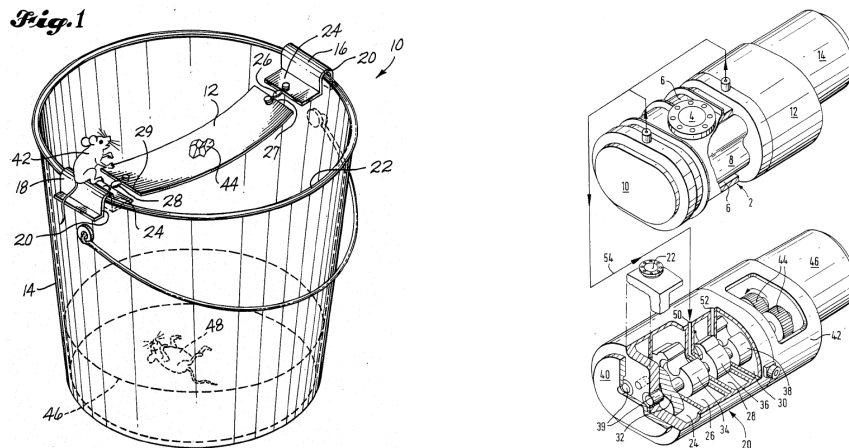
### Question 7

Carlsson sued Walmart, a popular retailer, for infringing the Carlsson patent by selling knock-off mousetraps. Walmart relied on, among other defenses, an argument that the Carlsson invention lacks utility, under § 101, for two reasons: (1) the invention kills innocent creatures, and so lacks beneficial utility; and (2) the invention is more expensive than conventional mousetraps, and so lacks specific utility. Evaluate these arguments.

### Question 8

Macalister also sued Walmart for infringement. Walmart asserted an obviousness defense, relying on, among other things, two pieces of prior art:

- ▶ a mousetrap patent (shown below left), filed in 1986 and describing and claiming a mousetrap with the form of a bucket with an unstable wooden bridge, in which mice who fall into the bucket are trapped; and
- ▶ a vacuum-pump patent (shown below right), filed in 1990 and describing and claiming a small vacuum pump of the general size and power of the pump described in the Macalister patent.



Are these patents relevant prior art for purposes of § 103? Explain.

### Question 9

Macalister's lawsuit against Walmart was successful, and the court awarded \$650,000 in lost-profit damages. Should the also court grant a permanent injunction preventing Walmart from selling the infringing traps? Explain.