Exam Number: _____

VILLANOVA UNIVERSITY SCHOOL OF LAW

Patent Law
Risch
Spring 2019

Final Exam

Exam Number: _____

VILLANOVA SCHOOL OF LAW
EXAMINATION IN PATENT LAW
8 HOURS

Professor Risch *Spring 2019*

INSTRUCTIONS (READ THEM ALL)

1. **Materials Permitted**: This is an OPEN book exam, with OPEN HARD DRIVE/OPEN NETWORK. **You may not receive help from any person.**

2. This exam consists of 10 pages, including the cover page. Please check to be sure your exam is complete and contains all pages.

3. Time allotted for the entire examination is 8 hours. This is a take-home exam. Thus, you have eight (8) hours from the time you download the exam to complete and upload the answer. If you are late, your grade will be reduced. If you experience technical difficulties, please follow registrar office directions or contact the registrar.

4. I recommend that you do not download the exam at a time when the due time will be outside of business hours of the law school.

5. **Note that the exam will be held until the 3L cutoff, but there may be make-up exam days. You must be careful not to disclose any details of the exam to your classmates or discuss any aspect of the exam (or your answer!) until after I post an announcement notifying you that you may do so.**

6. **Page three of this exam is a confirmation that you understand this – please print, sign, and turn in to Patty Trask at some point before May 8.**

7. **THIS EXAM INCLUDES A STRICT WORD LIMIT OF 4200 WORDS**. I am grading each exam all at once, so feel free to refer to a prior answer if relevant. NOTE: You do not have to use all of the words available – the questions can be answered in less space than allotted. **I will stop reading after the word limit is reached**.

8. Do not rely on page counts; you should count words using your word processor's "properties" menu item or in the bottom bar of your word processor. You may divide the word limit among the different questions however you wish.

9. Your exam must be typed, double spaced, in legible font, and on 8.5 x 11 paper size.

10. Use **only** your exam number. You may not use your name or anything else that might identify you on these materials, so check your document properties. You may not identify yourself in any way to the professor as the author of an exam until the grades are published. Make sure that your exam number appears on each page, which is most easily done with a header or footer.

Have a great summer!

Patent Law Final Exam, Spring 2019.

I _____, confirm that I abided by the instructions of this exam and have obeyed and will obey the Villanova University School of Law Code of Conduct with respect to the above exam, and that I have not discussed and will not discuss any part of the exam, its contents, or my answer with any of my classmates until after I am notified that I may do so.

Dated:_____ Signed: _____

Please return to Patty Trask in Room 260 by 5PM on May 8, 2018. I cannot give you a grade without it.

Patent Law Final Exam
Spring 2019

The questions are weighted as follows: Question 1, 55 points, Question 2, 28 points, and Question 3, 17 points for a total of 100. If any of your answers depend on facts not stated in the problem, feel free to identify which facts would be helpful, and how they would affect resolution of the issue. You may refer to answers to prior questions. Remember your word limit. **I WILL STOP READING WHEN I REACH THE LIMIT**.

ALL PEOPLE, WEBSITES, AND EVENTS ARE FICTIONAL, EXCEPT THOSE THAT ARE REAL, BUT EVEN THEN DO NOT LOOK OUTSIDE THE FACT PATTERN GIVEN. DO NOT RELY ON ANY CASES, STATUTES, CLAIMS OR OTHER ARGUMENTS THAT ARE NOT BASED ON ASSIGNED READINGS OR CLASS DISCUSSION – YOU DO NOT NEED TO DO RESEARCH TO COMPLETE THIS EXAM.

DO NOT ASSUME THERE IS ANY PRIOR ART OTHER THAN THAT DISCLOSED (IF ANY) IN THIS EXAM.

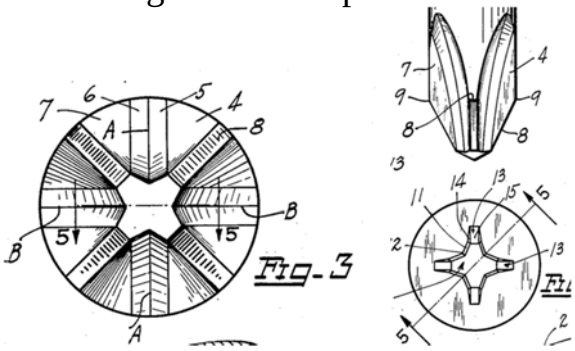
Stripped Screws

An age-old problem in construction is the problem of stripped screw heads. Quite simply, screws become stripped when the "driver" does not properly engage with the screw, and the metal becomes deformed. When this happens the screw cannot be tightened—or loosened. A picture of stripped screws is below:

One of the first great solutions to this problem was invented by Phillips – it was so important they still call his invention by his name. In patent 2,046,837 (the ‘837 Patent or Phillips Patent), Henry Phillips described:

> [T]he elements constituting my present form of composite invention are constructed along complementary angular lines to effect a positive wedging engagement when the screw and driver are joined together in operative relation, instead of the driver merely occupying the space defined by the recess as is the case in the aforesaid separate screw and driver inventions.
>
> The screw is also centralized with respect to the driver, not only during its starting operation but also throughout its entire advancement, and during such advancement, the driver is locked in its proper centralized working relation with the screw, and any danger of its leaving the screw is thus entirely eliminated…. Still another object of the invention is the provision of angular faces in such relation to each other that the wedging engagement may be obtained by the mere gravitation of the driver and the operator's hand applied to it. *The angular faces, in other words, are so related to each other that even a slight downward thrust of the driver into the recess will cause a firm wedged engagement between the two elements*.
>
> Moreover, by reason of the perfect fit between the driver and the screw, *the screws may be driven and removed innumerable times without the slightest indication of mutilation to the head. This highly desirable feature is made possible by the firm contact of all the angular faces of the driver into the corresponding angular faces of the recess formed at many different equidistant points around the longitudinal center line of both the screw and the driver*.
>
> (emphasis added) (this patent is actually the third patent on the basic theme, but an improvement on the basic crossed slots)

Some images from the patent are below:



The ‘837 Patent was filed on July 3, 1934, and granted a mere two years later, on July 7, 1936.

Since the invention of the Phillips head screw and driver, people have sought a variety of different ways to make non-strippable screws. For example, Ikea is famous for selling its hex (or Allen)[1] head screws for building furniture, which it has been doing worldwide since at least the 1980’s.

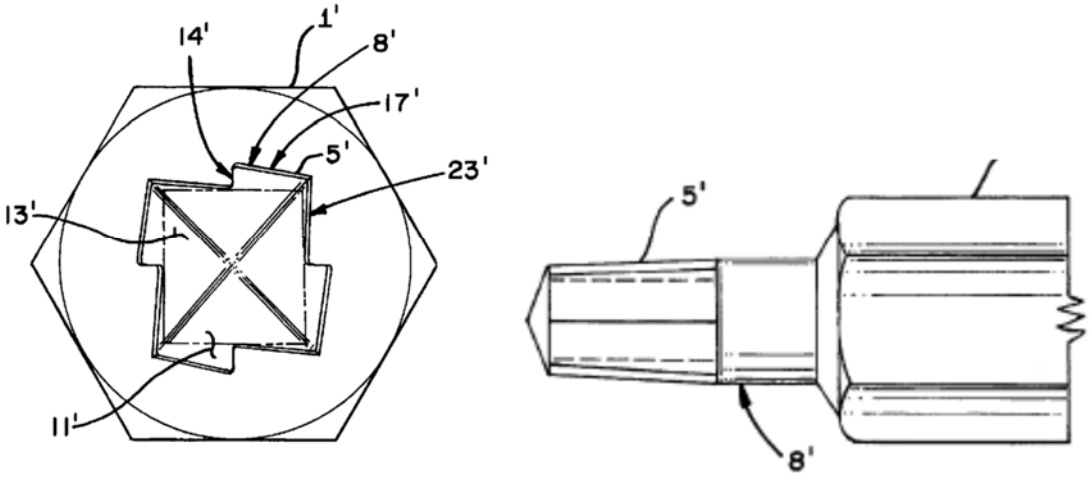
However, the Ikea furniture has predrilled holes for its screws, which makes installation easier. Ikea experimented with using hex head screws for ordinary construction (that is, not pre-drilled, using high-torque power drivers), and found that the hex heads stripped out too easily as shown in the following picture.

[1] see Pat. No. 960,244 [no need to consider this patent as prior art – it’s a manufacturing method]

Patent Holder

Patent “Pat” Holder wanted a different way to drive screws. Pat thought that the Phillips system was fine, but not useful for high-powered drivers used in construction. Pat sought a better solution. In March of 2014, Pat started looking for ways to make a better screw and driver. After experimenting with a variety of different formats, Pat discovered that adding “wings” to a central square recess would work best. That is, he found that the problem with hex or even square drivers was that there was that the circular rotation (turning the screw) put too much pressure on the indentation in the screwhead. As a general rule, some sort of extension away from the central hole was necessary for the driver to push on as it turned.

The following drawing illustrates Pat’s discovery.



On the drawing, 13 is the central indentation. Item 17 is one of the four “wings,” which is just an indentation extending out from the central indentation. The discovery is that the “wings” allow the driver to put pressure on the corner of 8 and 14 meet, rather than on the edge/corners of the central indentation. The driver (shown above but not part of the invention) would have added ridges (5 in the above drawing) that would fit into the wing (17). The tight fit of the ridges into the wing indentations allows for maximum grip and minimal stripping. Pat’s discovery wasn’t limited to this shape. Any central indentation with wings extending from it fits the discovery.

On June 1, 2014, Pat sent manufacturing plans to a fab in China. Fabrication steps ensued, and the first shipment arrived in December of 2014. Pat put the screws on sale on Dec. 15, 2014.

On June 1, 2015, an engineering professor publishes an article that describes the basic discovery that Pat made—namely that “wings” from a central recess reduce screw stripping.

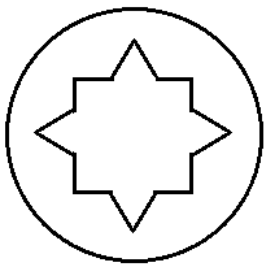
The Japanese Bolt

On Jan 1, 2015, Construction “Con” Worker filed a PCT patent application in Japan (written in Japanese) for a new type of bolt head to be used in building cars. A bolt gets screwed into a nut, while a screw has a pointy tip to dig into wood. As a result, the new bolt head wasn’t featured for its ability to avoid stripping. In the picture below, a bolt is on the left, and a screw is on the right.

The patent application was filed in Japanese, and properly designated the US under the PCT. Con properly opened the US prosecution a year later on Jan. 1, 2016. The applications were published in Japan after 18 months in accordance with the PCT and Japanese Law. The English version published in the U.S. 18 months after 2016, but the applications are still pending. The application was filed in Japan first because of the automotive applications.

Con can prove that the Japanese Bolt reduced to practice in May of 2014.

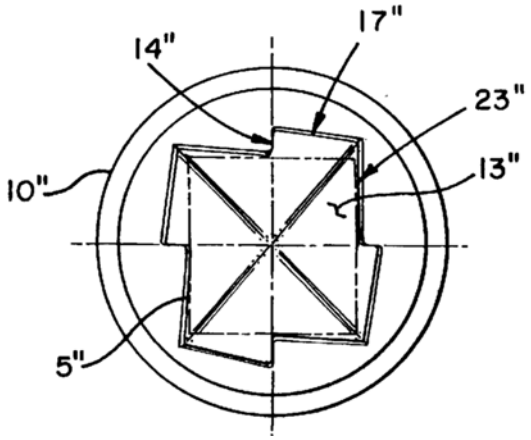
Because the application was a bolt, the claims and specification are somewhat different. However, here is a drawing of the bolt head, which includes a central square indentation and four triangle indentations extending out from it:



The ‘123 Patent

On December 31, 2015, Pat filed for a patent. Relevant portions of the specification are below:

> Threaded screws require high-torque to be driven into materials, such as wood, that accept such screws. This invention is a new type of screw intended to allow such construction without “stripping” screwheads. Therefore, an object of the present invention is to provide a threaded fastener capable of receiving high torque forces by presenting a unique geometric recessed configuration which is here characterized as "winged.”
>
> The article of manufacture for use in a torque transmitting system or the fabrication of components for such a system includes: a threaded shank (not pictured) and a head (10 in the drawing below) having a central recessed portion (13), one or more recessed wings (17) extending outward from the central recessed portion. Said wings are configured to absorb the force of a high torque driver (14). The wings in the figure are roughly trapezoidal, but they could be any shape capable of accepting force from a driver of the same shape.



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I claim:
1. A screw for use in a torque transmitting system
including a driver or the fabrication of components for
such a system comprising:
     a. a threaded shaft,
     b. a head configured to accept a custom shaped driver,
said had comprising:
          i. A central recessed portion of any shape; and
          ii. One or more winged recesses protruding from
     the central recessed portion.
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The application published in due course on June 30, 2017.

After seeing the Japanese Bolt application, Pat amended to add a second claim:

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2. The screw in Claim 1, wherein:
     a. The central recessed portion is square; and
     b. The “wings” are roughly triangular
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The ‘123 Patent issued on June 30, 2018 *with both claims*. Pat’s product is a complete failure, however. It turns out that it doesn’t work at all – the drivers strip the screw heads just as badly as a flat head screw.

Con has since started selling the Japanese Bolt, and Pat has sued for infringement of Claims 1 and 2 of the ‘123 Patent.

ASSUME THAT THE AMERICA INVENTS ACT APPLIES UNLESS THE QUESTION STATES OTHERWISE

QUESTIONS:

Q1: You are counsel for Pat Holder. Please draft a memo describing the challenges to the validity of the ‘123 Patent that Holder might see, and the responses Holder has to such challenges. (55 points)

Q2: You are counsel for Con. Please draft a memo describing the infringement claims by Pat that Con will likely see on the Japanese Bolt, and the responses Con has to such claims. There is no need to address contributory or induced infringement. There is no need to address any defense of invalidity from Q1. (28 points)

Q3: Assume that this case fell under the 1952 Act. How would the analysis in Question 1 change? Answer in 20 sentences or less. (17 points)