Legal Analysis

Year: 2021 Semester: Fall Team: 8 Project: Sink or be Sunk

Creation Date: ­October 23, 2021 Last Modified: November 3, 2021

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Assignment Evaluation:

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| --- | --- | --- | --- | --- |
| **Item** | **Score (0-5)** | **Weight** | **Points** | **Notes** |
| **Assignment-Specific Items** | | | | |
| **Regulatory Analysis** | 5 | x3 |  |  |
| **Analysis of Patent 1** | 5 | x3 |  |  |
| **Analysis of Patent 2** | 5 | x3 |  |  |
| **Analysis of Patent 3** | 5 | x3 |  |  |
| **Writing-Specific Items** | | | | |
| **Spelling and Grammar** | 5 | x2 |  |  |
| **Formatting and Citations** | 5 | x1 |  |  |
| **Figures and Graphs** | 5 | x2 |  |  |
| **Technical Writing Style** | 5 | x3 |  |  |
| **Total Score** | 100 | | |  |

5: Excellent 4: Good 3: Acceptable 2: Poor 1: Very Poor 0: Not attempted

Comments:

*Excellent analysis – keep up the good work!*

1.0 Regulatory Analysis

The FCC (Federal Communications Commission) is a very common regulatory certification that is primarily concerned with RF or EMI. With that being said, it is critical to ensure our game is meeting their standards as we will be utilizing the ESP32 board. Thankfully, the ESP32 we purchased is already approved by the FCC [1]. Nonetheless, in order to get Sink or be Sunk fully approved, it is critical that each of the devices in our design that can potentially emit waves or interference are considered. The FCC divides devices into classes; Class A represents devices that are more specifically designed for business and commercial practices whereas Class B represents devices a much wider spread, including household items [2]. With that being said, Sink or be Sunk falls under Class B and must undergo the Certification procedure within Equipment Authorization [2].

The FCC certification process outlines that in order to undergo a compliance certification, we must acquire a FRN (FCC Registration Number) that will be used to get a Grantee Code, which will then be used for the Compliance Test itself. Once this process is completed, the TCB (Telecommunications Certification Body) will aid in achieving the grant as long as all the game itself, the Compliance Testing, and any other required documentation is well presented [3].

Another type of regulatory agency is the CE (Conformité Européenne), which is responsible to uphold the standards for “European health, safety, and environmental protection” [4] and required for Sink or be Sunk to be sold in Europe. The primary concern for getting this certification is the use of lead solder, which is also something that must be considered for RoHS (Restriction of Hazardous Substances). In order to apply for the CE certification, our team must double check that our game falls within each of the EU requirements listed, identify a third-party for assistance, and finally gather our documentation (much of the information from the FCC documents will be utilized) to create a Technical Document regarding our conformity [5]. As for the RoHS, as previously mentioned our concern is lead: the RoHS outlines that anything containing lead is banned [6]. Thus, by replacing our lead-based solder with lead-free solder we can eliminate that issue. Additionally, in order to get our CE certification, we must first conform with the regulations of hazardous materials listed as the RoHS is a prerequisite for the CE [6].

* 1. Intellectual Property Assessment

Sink or be Sunk is a modernized version of the classic board game “Battleship”, and thus is critical that we are not duplicating the game but redesigning the game play. Moreover, “Battleship” has been around for many years and while some aspects of the game are considered open to the market, others have strict copyright, trademark, or patent laws.

In terms of the rules of Sink or be Sunk, they are basically the same as the original “Battleship”, however some adjustments have been made to accompany our enhanced design and additional peripherals. This is not problematic towards any copyright laws because “the systems or processes that make up the core of a game—generally referred to as the “game mechanics”—are not subject to copyright, even though the written rules, game board, card artwork, and other elements—often referred to as the “theme” of the game—may be.” [7]. Through further research, while some patents regarding design and physical layout, and trademarks discussing naming rights and art exist, our team does not need to stress over IP infringement of the rules of the game itself.

While our team is working to reintroduce “Battleship” to the market with a twist, we cannot use any of the same naming, art, symbols, colors, etc. as the original. This is because Hasbro is the current owner of the federal trademark for any board games, electronic games, or even video games with the name “Battleship” [8]. Moreover, Hasbro’s intellectual property is primarily their “Battleship” naming right along with other relevant terms and sayings, characters, images, and logos [9]. Still, it is critical for our team to consider this for visual displays and sound effects. For instance, saying “You sunk my battleship!” may be a nostalgic part of the game, but it is most likely trademarked by Hasbro. Thus, by creating our own logo, adding our own personal design touches, and promoting out team’s uniqueness, we are able to avoid infringement.

2.0 Legal Liability Analysis

2.1 Analysis of Patent Application US65798033A - Original Board Game “Battleship”

Patent Title: Game Board

Filing Date: February 23, 1933

Publication Date: January 15, 1935

Inventors: Louis Coffin

Summarized Abstract:

Louis Coffin’s Game Board patent was intentionally designed to be versatile and allow for multiple types of two player games, specifically “Battleships” but with different game modifications. The board stands upright between two players and has two 10x10 grids of circular pin holes, one on the left-side and one on the right-side. The holes go through to the opposite. Additionally, the game board is patented with specialized pegs which can be differentiated between sides, allowing one player to recognize some target while remaining ambiguous to the other [10].

Key Claims:

Below are the key claims posed by the patented design that are most relevant to our design [11].

* Standing game board, to be placed between players, with two sections through-hole grids (one per opponent, depending on the game)
* Pins/pegs that are inserted into the board with targets only facing one direction
* Pins/pegs with distinguishing characteristics designed to fit into opposite sides of the game board

Infringement Case Analysis:

Coffin’s patent was the kick-start to the common day “Battleship” – a board game that our team is working to modernize and reinvigorate. With that being said, it is critical to analyze the patent to identify any potential overlap in the board designs. In terms of similarity, our boards will be utilizing a very similar grid set up with peg-placement. We will also be using two grids per player – one for attacking the opponent and one for placing your own ships. However, this is where the similarities end.

In our boards, the pegs will be secured within boats, and therefore there will not need to be any individual pegs. Additionally, the actual designs of the two boards are very different from each other. Coffin’s board is a strictly standing board to be placed between opponents; our boards are fit snuggly into a briefcase-type enclosure with a grid secured to either side. Fundamentally, Coffin’s design targeted games for players being in the same room, very close to each other whereas our boards are designed to be played with a partner directly next to you, or many miles away. As for the grids themselves, instead of being arranged in a 10x10 layout, ours will be 8x8.

Overall, it was critical to analyze this patent because it was the first “Battleship”-like patent created, however it does not appear that we will have any infringement with this specific patent. Our game board layout is rather unique to the original, and more similar to the modern day versions. Had our team decided to use peg placement for attacking the player’s boats, then there could have been more infringement possibility as that would be more closely regarding the pin placement outlined in Coffin’s patent. Another case of possible infringement would have been if we utilized just one board; this could have interfered with the claims Coffin made in his patent as it would have used a very similar upright-board design.

2.2 Analysis of Patent Application US2898108A - Electronic Battleship Edition

Patent Title: Battleship Game

Filing Date: September 12, 1958

Publication Date: August 4, 1959

Inventors: Richard C Meyer

Summarized Abstract:

In the patent created by Meyer, the invention is an electric adaptation of the traditional game “Battleship”. The design utilizes the same grid approach as the traditional battleship, but consists of both mechanical and electrical elements. Players place their ships into the grids and consequently a series of switches close themselves. Once enough switches are closed, the current flowing through the resistance of the inner circuitry is decreased, allowing enough current to power an indicator light to identify to the player that they have successfully placed sufficient boats. To attack the opponent’s grid, a player must manually adjust the knobs located on the outside of the boat to correspond to the appropriate grid square. If the knob is adjusted to a grid square consisting of a closed switch on the opponent’s board, then a “hit” is detected and an indicator light is illuminated [12].

Key Claims:

This patent includes many different claims, the most significant and relevant to our application are listed below [12].

* When a square (grid location) is selected by the user, a corresponding selector-type switch is closed
* Players will utilize physical knobs on the game boards to select a selector switch for a specific location that is corresponding to a location on the opponent’s game board
* When the knob changes position it will disassociate from the previous location. In a similar fashion, the latches corresponding will disengage
* A secondary “counting” series of selector switches will be engaged when the desired amount of selector switches on a specific panel are closed
* Each of the circuits dedicated to counting includes a relay with an adjoining operating relay, amplifier, and methods of reducing reverse bias from panel to tube flowing
* Two relays to ensure that the two switches that are operated by the players cannot be closed at the same time – two players cannot attempt to hit the attack at the same time

Infringement Case Analysis:

In the patent outlined above, it is evident that Meyer incorporated an electrical twist on the original paper and pencil game, but he also added a significant mechanical element. In his design, he utilizes adjustment knobs for locating the coordinates to attack and uses mechanical springs as a part of the ship detection apparatus. In doing so, his unique method of identifying and attacking contrasts fundamentally with our methodology. Meyer also included both a “fire” button to be pushed after manually locking in coordinates. Something else that stood out to me as vastly different from the traditional style of “Battleship” is the illuminating lights to indicate to the player whether or not enough boats have been placed.

Still, our game flow designs have some similarity, specifically. For instance, our team had originally thought to use switches, without the springs, as a part of our ship design, however we changed it to simply shorting a voltage measurement (which could still be done with a switch). Our team made this decision simply because we found the method of pushing the boats into the board to trigger the switches to be unreliable. Upon further analysis of Meyer’s patent, it seems that by including the springs to hold the switches and latches in place is a more reliable method, but had we done the same thing this would have led to patent infringement possibility. Moreover, Meyer’s inclusion of latches, specifically for resetting the board, is something that we considered, however because we are primarily using the shortages from the boat pegs themselves, it was something we cannot consider until the boats are removed.

Overall, our design is still considerably different from Meyer’s. Our design is based off of player boat placement, the physical pegs of which will create shorts and change the voltage values substantially from the other voltages being monitored and will signify the game server that a boat has been placed. Instead of counting the number of “targets” identified, instead we will wait until all of the boats have been identified (which will be done through continuous scanning and checking on the microcontroller). As for attacking opponent ships, the players will use a simple keypad that is devised of internal switches and relayed to the microcontroller as well. The keyboard will have keys with two indicators, one for the row and one for the column. The user will input two keypad punches, then a light will illuminate on their grid to identify either a hit or a miss on their board. On top of this, our game implements an LCD display to both verify the targeted coordinates and provide menu options, a speaker to play a variety of sound effects, and a small rumble motor to invoke vibration upon sinking a ship.

2.3 Analysis of Patent US7665735B2 - Closeable Type Board Game

Patent Title: Closeable-Type Game Board Box for Strategic Word Pattern Engagement

Filing Date: April 30, 2007

Publication Date: February 23, 2010

Inventors: Benedict Lii Milner

Summarized Abstract:

The patented game board box design by Milner is a closeable container including grids on either opening. It is included that the design is not limited to, but primarily designed for, language-related games. The board opens, and stands open, at a 90 degree angle to shield the player’s personal grid. The two grids inside the box are of the same dimensions. The grid on the bottom is primarily used for aligning tiles on the grid (using magnets). If a letter is identified, a copy is placed into the top grid, which can be seen on the opposite side by the opponent [13].

Something to note that is specific to this patent is the physical game board packaging design. As briefly outlined in the Regulatory Analysis, because “Battleship” is a game that has existed for many years, the game flow itself cannot be copyrighted or patented. With that being said, it is critical to include other, similar patented designs for the most critical aspects of Sink or be Sunk to ensure we are avoiding copyright with anything of similar design.

Key Claims:

Below are the key claims for Milner’s patent. The most critical portion of these claims is that in the first claim, it directly states “In a method of playing a word discovery game apparatus comprising . . .” [13]. Only the most relevant claims in Claim 1 have been included.

* Claim 1: Specifically for the use of playing a “word discovery” game board [13],
  + The container is both rectangular and closeable, relaxes to a 90 degree angle along a hinge, and contains two distinct playing grids of some (equal) number of rows and columns
  + One of the playing grids is used as an area for a player to arrange their words (to be strategically guessed by opponents)
  + One of the playing grids is used for picking squares with corresponding coordinates to guess if an opponent’s word has a letter existing there
  + Magnetically attached labels for each of the rows/columns for identifying coordinates
* A continuation of the first claim along with each of the labels representing a row/column is identified with a letter
* A continuation of the first claim along with each of the labels representing a row/column is identified with a number
* A continuation of the first claim along with each of the labels representing a row/column is identified with an object
* A continuation of the first claim along with each of the labels representing a row/column is identified with a color
* A continuation of the first claim along with each of the labels representing a row/column is identified with a person or character representative

Infringement Case Analysis:

Once again, upon first coming across this patent, I found it irrelevant to Sink or be Sunk. However, after further digging and discovering that very few patents have been created (since most of “Battleship” is trademarked by Hasbro instead [9]), I found this to be extremely similar to the design we are implementing, as well as the original “Battleship”. For instance, the fundamental purpose for one of the dual boards in the patent by Milner is to use one for hosting your own private targets, which can be identified by the opposing user. Additionally, the game flow is virtually the same as “Battleship”, except for the use of words instead of ships. For that reason, the grid set up is almost identical and the coordinate labeling is extremely similar.

Nonetheless, the biggest differences between our design and the proposed design, other than the intended gameplay, is Milner’s inclusion of a window-like top grid and the use of magnets for placement on the lower grid. Because our designed is catered to players at both short and long distances apart, utilizing a window-like grid would be non-beneficial.

Still, it is crucial to identify that each of the claims are only regarding word and language related game strategies. Without this single line, our team could have run into potential infringement with the private player grid, the row and column identifiers, and most significantly, the overall closeable container itself (based on claim 1). This patent was critical to identify now as it is extremely similar to our game.

3.0 Sources Cited:

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[2] M. E. T. Labs, “6 steps to successful FCC testing & certification of electrical products,” *Eurofins E&E North America*, 30-Sep-2019. [Online]. Available: <https://www.metlabs.com/wireless/6-steps-to-successful-fcc-testing-certification-of-electrical-products/>.

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[11] L. Coffin, “Game Board,” 15-Jan-1935.

[12] R. C. Meyer, “Battleship Game,” 04-Aug-1959.

[13] B. L. Milner, “Closeable-Type Game Board Box for Strategic Word Pattern Engagement,” 23-Feb-2010.