Legal Analysis

Year: \_\_2017\_\_\_\_ Semester: \_\_Spring\_\_\_\_\_\_ Team: \_\_8\_\_\_ Project:\_\_\_\_\_\_Barbot\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Creation Date: \_\_\_\_3/22/3017\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Last Modified: March 3, 2015

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Assignment Evaluation:

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| --- | --- | --- | --- | --- |
| **Item** | **Score4 (0-5)** | **Weight** | **Points** | **Notes** |
| **Assignment-Specific Items** | | | | |
| **Regulatory Analysis** | 5 | x3 | 15 |  |
| **Analysis of Patent 1** | 5 | x3 | 15 |  |
| **Analysis of Patent 2** | 4.5 | x3 | 13.5 |  |
| **Analysis of Patent 3** | 4.5 | x3 | 13.5 |  |
| **Writing-Specific Items** | | | | |
| **Spelling and Grammar** | 4 | x2 | 8 |  |
| **Formatting and Citations** | 5 | x1 | 5 |  |
| **Figures and Graphs** | 4 | x2 | 8 |  |
| **Technical Writing Style** | 5 | x3 | 15 |  |
| **Total Score** | 93 | | |  |

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

Comments:

1.0 Regulatory Analysis

**1.1 Federal Communications Commission(FCC)**

For selling Barbot in the market of United States, Barbot needs to get certification from the Federal Communications Commission (FCC) at first.[1] Federal Communications Commission set electromagnetic compatibility standards such that this device won’t interfere other devices’ working. So, all the products containing electronics that oscillate over 9 kHz will need to get the certificate of FCC. Barbot, as a home use device, is classified as a Class B Digital Device by FCC.

One important function of Barbot is to let users make their orders through Android application communicating with microcontroller by Bluetooth Module, RN4020. Typically, devices containing bluetooth transmitters will classified as an intentional radiator, and this kind of devices also need certification from FCC. There are three steps for certifying unintentional radiators standardized by FCC.

1. Certification
2. Declaration of Conformity
3. Verification

As a home use device, Barbot will not interfere other household appliances, such as televisions or computers. For this situation, Barbot only need the third step, Verification, to get the certification from FCC. This rule is stated clearly in Subpart B of Title 47, Part 15. FCC stated that “Verification is a procedure that requires the party responsible for compliance to rely on measurements that is of another party makes on its behalf to ensure that the equipment complies with the appropriate standards”. Barbot needs to go through a measurement test to make sure that Barbot works under all the electronic equipment standards before placing in the market. This test is not required to use an accredited testing lab of FCC, but it’s essential to provide a trustful testing report to FCC in this step. After this step, the team also need to properly label the FCC certification on the product following the guidelines from FCC.

**1.2 European Union Certifications**

Products with European Commission (CE) marking are allowed to place in Europe Union’s market. [2] To get this mark, all products need to go through the process of electromagnetic compatibility (EMC) testing. It’s mentionable that, electromagnetic compatibility test is the same one as the measurement test of FCC, as long as the testing lab is globally accredited. In other word, the report of measurement test of FCC is also approved by European Commission. If Barbot could pass the measurement test held by a globally accredited testing lab, Barbot could get both FCC certification and the mark from European Commission.

2.0 Legal Liability Analysis

2.1 Analysis of Patent 1

**Patent Title:** Automatic cocktail machine and method

**Patent Holders:** Hsiang-Chi Huang

**Patent Filing Date:** May 13, 2013

This is an automatic machine designed with several different modules, which are raw material module, processing module, bartending module, and output module. In raw material module, there is a container, which contains all the liquors, such as water, a carbonic acid gas cylinder with carbonic acid gas in it, and other drinks. There are cocktail recipes storing in the processing module, and this module find out corresponding recipe with the order directly. After the processing module processing the order, bartender module will begin to mix drinks in the recipe. After the bartending module receives the cocktail recipe, mixing the water and the carbonic acid gas from raw material module to form a carbonated water per recipe of the cocktail, and adjusting the carbonated water to a required temperature. Finally, the output module will mix the output from bartender module, and the drink is ready. [3]

The key claims put forth by Huang are as follows [3]:

1. Raw materials include water, a carbonic acid gas cylinder having carbonic acid gas and a plurality of cocktail materials;
2. After receiving order, and can get the recipe from the list of orders and process the order.
3. Adjusting a quantity of water and the carbonic acid gas per cocktail recipe, mix them to get carbonated water based on the recipe of cocktail, and adjust the carbonated water to a recipe temperature;
4. Adjusting a quantity of the cocktail materials per the cocktail recipe, and then mixing the cocktail materials with the carbonated water at the recipe temperature to output the cocktail.
5. In the output module, shake and mix the cocktail materials and the carbonated water at a predetermined shaking speed.

Compare to our project, this patent has several more mentionable functions. This automatic bartender can shake and mix the cocktail materials at a constant speed. For Borbot we designed at first, we wanted it have a similar user friendly function like this, but shake and mix involves more mechanical engineering stuff, which is a little bit more out of our league. Also, the reality is that not every cocktail need to be mixed up, Barbot cover the shortage of missing mix procedure by orderly dispense the drink exactly as the recipe required. This patent also use a carbonic acid gas based on considering the taste of the cocktail. Carbonic acid gas is not really required for every cocktail drink. Although the cocktail with carbonic acid gas will taste better, it is not necessary.

2.2 Analysis of Patent 2

**Patent Title:** Apparatus for automatically dispensing single or mixed drinks

**Patent Holders:** Robert Clark

**Patent Filing Date:** March 3, 2016

This apparatus has given cylindrical containers fixing on a cabinet. Five containers are filled up with five different liquor. For each container, there is a tube connected between the bottom of the container and a gear driven electrically operated measuring pump. The pump accurately measures out a required volume of liquid by measuring the time the pump is pumping. Under each pump is a solenoid valve, which is used to dispense all the measured drink from the pump. A programmable logic controller (PLC) is operatively connected to the pumps and valves and can be programmed to dispense very precise different mixtures of different liquids. There is also a touch screen unit, which is operatively connected to the PLC, providing drinking information and order.[4]

Here are some essential claims of this apparatus [4]:

1. An apparatus for dispensing liquid from a plurality of liquid containers.
2. An apparatus with a separate gear driven measuring pump can operatively connects to each of liquid containers.
3. An apparatus with a separate solenoid valve for each of gear that driven measuring pumps.
4. An apparatus can supply electrical power to solenoid valves and gear driven measuring pumps;
5. Programmable logic controller operatively connected to a touch screen unit fastened to a wall of a cabinet.

The biggest difference between this apparatus and Barbot is that Barbot doesn’t need to use any pump for dispensing the liquor. Barbot only use valves with the help of gravity to dispense the liquor. Barbot uses linear actuator as the driver to control the valve, and the valve with a buffer about 25ml. Every time, Open the valve can only dispense 25 ml of liquor. So, the Barbot need to control the number of times to open the valve, not measuring the time to open the valve. Barbot also uses Android APP, not a touch screen, to interactive with users. Users could choose their order, or they can custom their own drink on that APP.

**2.3 Analysis of Patent 3**

**Patent Title:** Automatic Bar

**Patent Holders:** Mauro Leoni

**Patent Filing Date:** February 22, 2000

An automatic device for preparing mixed and regular beverages. It has a conveyor used to convey containers into a desired position under a motor-driven rotary head having a plurality of receptacles for ingredients to be poured into the containers on the conveyor where each receptacle has an automatic-dosing actuation valve and the automatic bar includes an automatic system for managing positioning of the dispensers over the containers. [5]

The fundamental claim is as follow [5]:

1. Automatic system controls the choice of the ingredients and theiramounts.
2. A fixed set of electrically operated valves which can be operated automatically for dispensing other beverages contained in additional tanks.
3. Automatic bar is provided with a display system to display a user interface that comprises a display and means for entering the data for the orders.
4. It comprises an automatic ice dispenser.
5. It comprises an automatic mixer for the said mixed and non-mixed beverages.

This automatic bar also comprises an automatic mixer, which Barbot doesn’t have. This automatic bar also comes with an ice dispenser. Another difference is that this design could mix more liquor, because of the motor-driven rotary head. Approximately, each head could hold 5 different liquor, and there are total 2 rotary heads. So, there are at least 10 different drinks available to mix up the cocktail. For Barbot, it can only mix up to 8 liquor or drinks. There is a budget for building the Barbot, but the motorized rotary head design needs more money to build.

3.0 Sources Cited:

[1] “Equipment Authorization,” *Federal Communications Commission*, 17-Jan-2017. [Online]. Available: https://www.fcc.gov/engineering-technology/laboratory-division/general/equipment-authorization. [Accessed: 24-Mar-2017].

[2] CE marking", *Your Europe - Business*, 2017. [Online]. Available: http://europa.eu/youreurope/business/product/ce-mark/index\_en.htm. [Accessed: 24- Mar- 2017].

[3]"Patent US20140335242 - Automatic cocktail machine and method", *Google Books*, 2017. [Online]. Available: https://www.google.com/patents/US20140335242. [Accessed: 15- Mar- 2017].

[4]"US20060118581A1 - Apparatus for automatically dispensing single or mixed drinks - Google Patents", *Patents.google.com*, 2017. [Online]. Available: https://patents.google.com/patent/US20060118581A1/en?q=automatic&q=bartender&q=B67D1%2f08. [Accessed: 15- Mar- 2017].

[5]"US6607013B1 - Automatic bar - Google Patents", *Patents.google.com*, 2017. [Online].Available:https://patents.google.com/patent/US6607013B1/en?q=automatic&q=bartender&q=B67D1%2f08. [Accessed: 15- Mar- 2017].