

I. Abstract:

This device was created in order to reduce the number of engines in the house or in a company. The main idea of this device is to use one engine for all the appliances using the rotation of an engine.

II. Description:

Nowadays an increasing number of electric devices including an engine is used in the daily life. For example at home in the bathroom, with electric toothbrushes or in the kitchen, with blender or mixer... Considering that these appliances are not usually used at the same time, this leads to an important spend of money and material for achieving the same kind of functions.

This device was therefore created in order to reduce the number of engines in the house or in a company. The main idea of this device is to use one engine for all the appliances using the rotation of an engine, such as a translation (for instance for an electric knife) or a rotation (for instance a vacuum cleaner) or a combination of them. This device is eco-friendly by the fact the association between this engine and all the tools associated need less material. Indeed, usually for each tool, a command control, an engine, an energy provider controller and sometimes some electronic stuff are needed. With this invention, all these requirements for each tool are gathered only for the control of the engine. In addition, the fact no engine and no power supply have to be inserted in the tools is given more freedom for designing tools. Therefore, the absence of the engine and the power supply in the tools made them lighter and easier to handle during the application for the user. Besides, this leads to a reduction of the cost in manufacturing for each tool.

III. Claims:

1. The engine is an electric one and is located in a case or a box. This box should be removable and easily transportable so that it can be used in any kind of situations. Thus the weight of the assembly of the engine and the box should not exceed 2.5 kg. Moreover the engine length should not exceed 20 cm and its diameter should be less than 15 cm, as it can be seen on figure 1. The figure of an example of assembly for the case and the engine is available on figure 2. On this figure, the top case and bottom case are respectively indexed 1 and 2. The engine is indexed 3.
2. The transmission between the engine exit and the tools used can be done in two different ways. Firstly the transmission can be done through flexible transmission wire. For example for hand-used devices such as drilling machine or electric hammer. Secondly the assembly of the case and the engine can be integrated into the tool, such as in the vacuum cleaner for example. In this case the transmission is direct and doesn't need any flexible transmission wire. Some examples of tools are given on figures 3 to 5.

3. The energy can be provided to the engine in three different ways: either directly using an electric wire connected to an energy plug, or through an energy dock which can be integrated or not into the tool. A dock example is available on figure 5 and it is indexed 4.

4. The different tools require a rotation speed and a torque specified for each of them. In order to control the speed and sense of rotation and the torque for each tool, a potentiometer connected to the engine is used. This potentiometer is called "Rd" on the figure 3. This potentiometer can be fixed on the engine box or on the tools directly. This potentiometer can regulate or inverse the speed rotation and control the torque of the engine by hand or with a remote control. This remote control can use Infra Red, Wireless, Bluetooth, High Frequency or any other kind of distance control. The control system can be seen on figure 6. A switch in order to inverse the rotation sense of the tool can be added in the command system circuit. The place of this switch can be located at the emplacement noted 1 on the figure 6.

IV. Drawings:

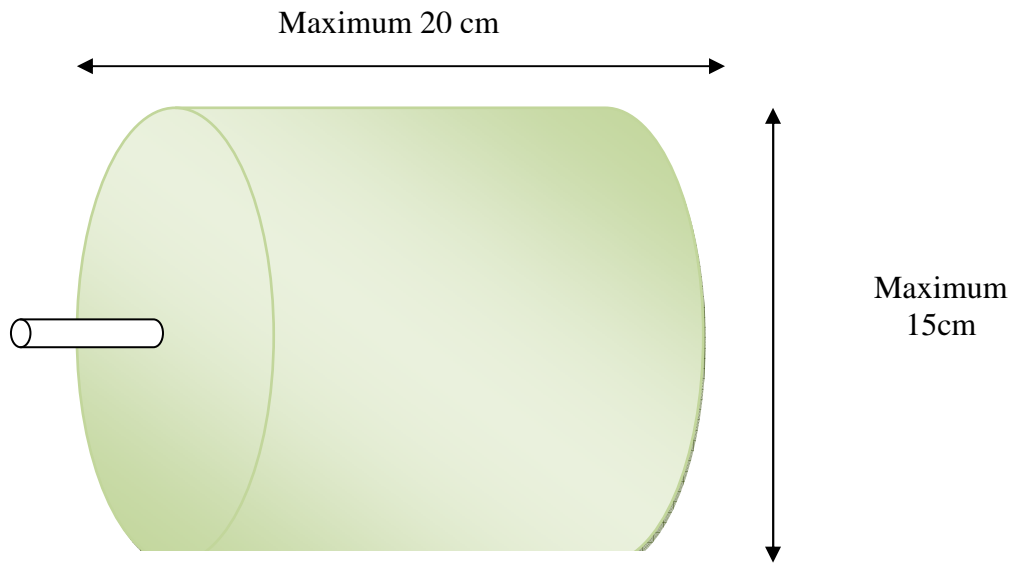


Figure 1 : Engine dimensions

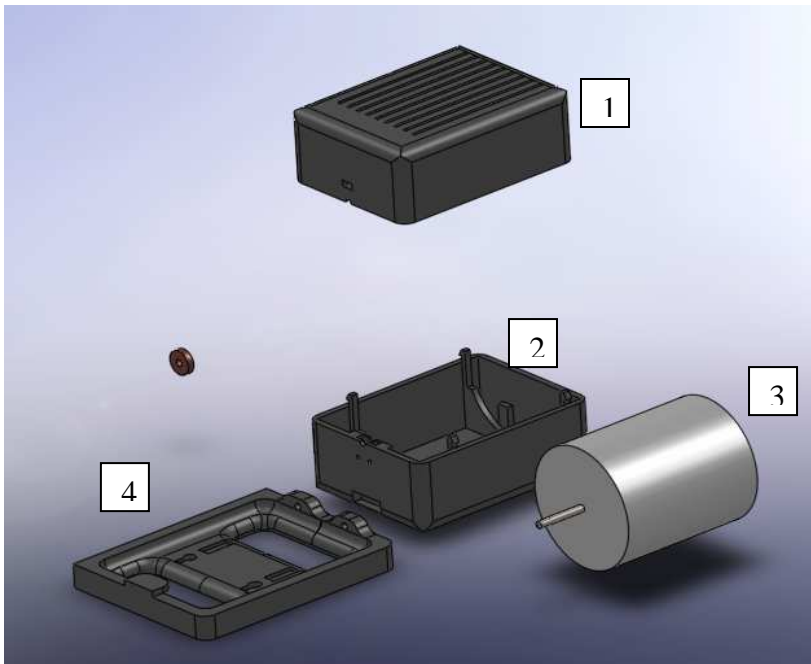


Figure 2: View of the engine/ case and dock

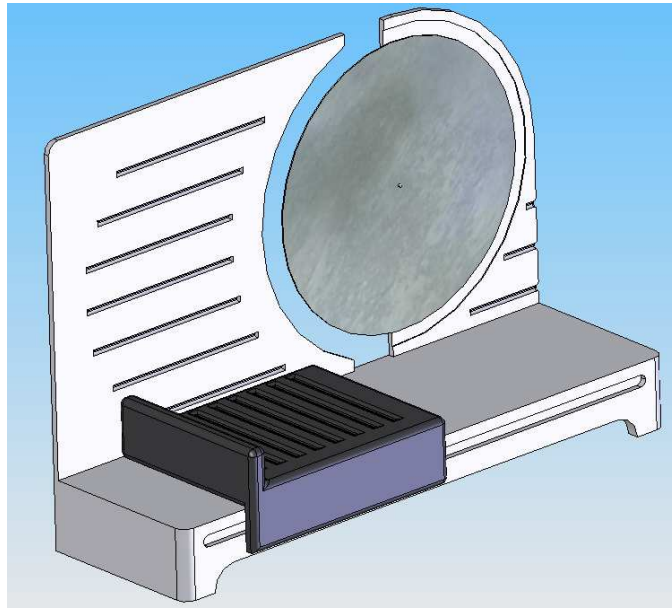


Figure 3: Example of a Ham Slicer which can be used as a tool

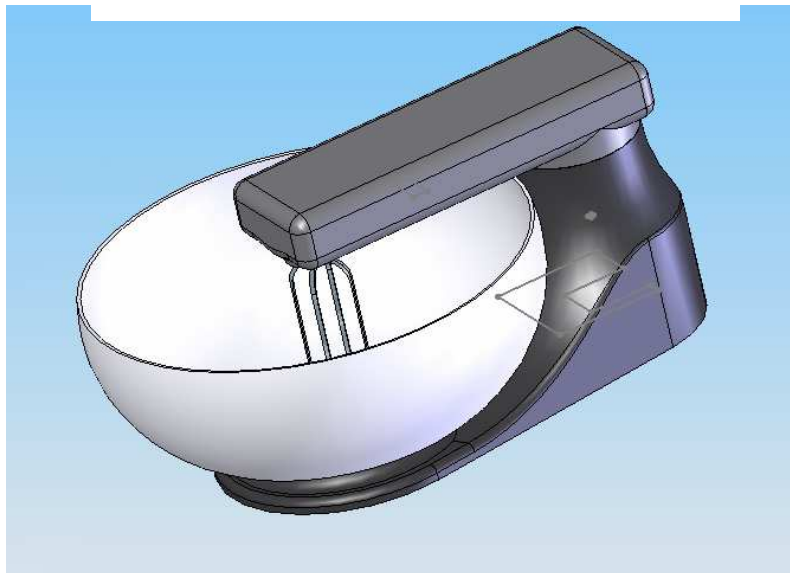


Figure 4: Example of a cooker which can be used as a tool



Figure 5: Example of a cooker which can be used as a tool

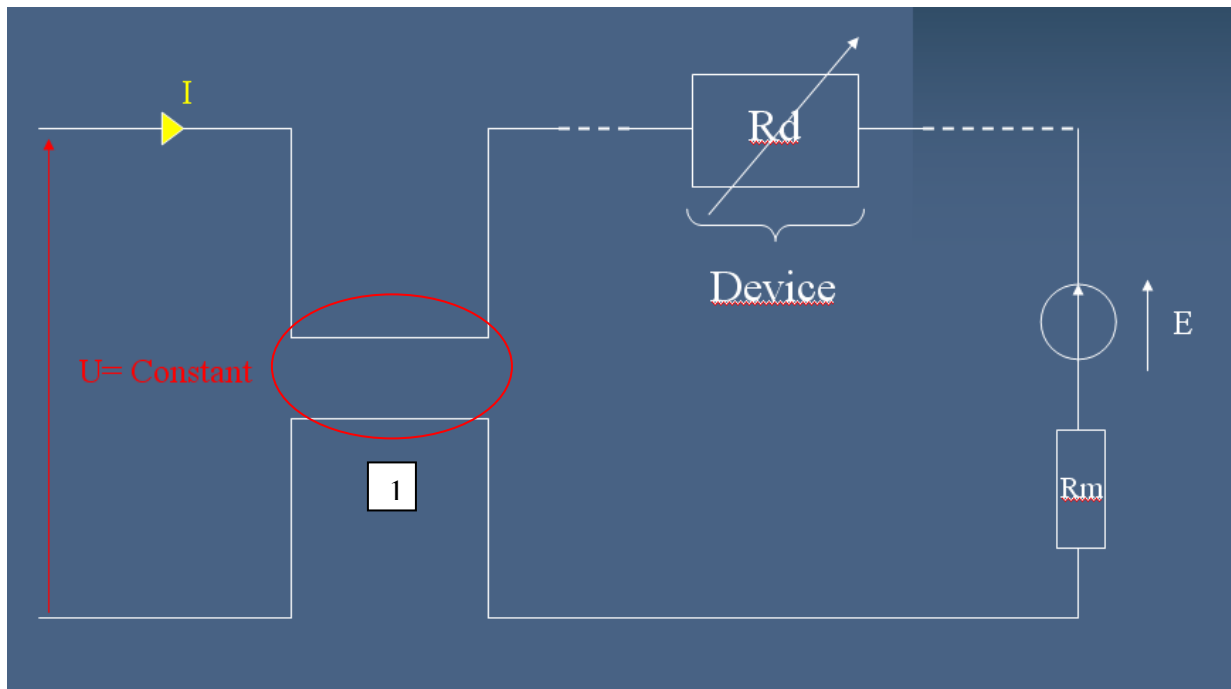


Figure 6 : Command Control Circuit