

## **Provisional Patent Application - Scrubbing pad operated by water power**

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A46B13/06

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## **Abstract**

A device for cleaning a brush by means of a water-powered cleaning pad. The cleaning pad is attached to an inverted cup-like body. The device is manually attached to a waterspout via a universal faucet attachment apparatus. A flexible piece of hose channels water directly into the top of a cup-like housing. The majority of the incoming water from the flexible hose is channeled into a cup-like rotor located within the body of the. This rotor motion is translated into the spinning of a scrubbing pad located on the open face of the device. Water is also channeled onto the open face of the scrubbing pad. Water is discharged through a port at the base of the device. A liquid reservoir also resides within the body of the device. This reservoir is intended for the storage of chemical detergents related to brush cleaning. A small button responsible for injecting the chemical detergent into the incoming stream of water is located on the exterior of the device

## **Background**

Cosmetic and makeup brushes come in a variety of styles and configurations. A commonly used method for brush cleaning involves swirling a wetted brush in a soapy solution followed by rinsing in warm water. Excess water is then squeezed out and the brushes are laid down on a clean towel or in a cup to dry. There are a variety of problems associated with conventional cleaning practices in terms of thoroughness, time efficiency, and sanitation. Alternative brush cleaning technologies exist in the form of manual scrubbers, ultrasonic baths, and mechanically driven scrubbers. The present invention is intended to address the limitations of current brush cleaning technologies while providing an experience that quickly, inexpensively, and effectively restores the cleanliness of cosmetic brushes. This device intends to add value by cleaning several brushes at once, having intuitive user design features, having a washing and drying function that thoroughly and completely cleanses brushes, and designing the device with inexpensive components that would allow its sale at a price point below that of competitive, mechanical alternatives.

## **Summary of the Claimed Invention**

1. A device for cleaning a cosmetic brush by means of a water-powered cleaning pad
  - a. A scrubbing pad is driven in by a cup-like rotor within the device of the body.
  - b. The rotor within the device is driven by water channeled by a universal faucet attachment apparatus and hose
2. Water from the universal faucet attachment apparatus and hose are directed down a large and small pipe.
  - a. The larger pipe directs a majority of the incoming water to the water-driven rotor.
  - b. The smaller pipe directs a small amount of the incoming water to the surface of the scrubbing pad.
3. The scrubbing pad attached to the open, exposed face of the cup-like body is comprised of a silicone pad.
  - a. This silicone pad is removable and can be exchanged by the user

4. The device is intended to be held with one hand while brushes are simultaneously held to the surface of the rotating silicone pad.
5. Chemical solutions intended for brush cleaning purposes are loaded into a liquid reservoir located within the body of the device.
6. Chemical solutions intended for brush cleaning are utilized during the cleaning process via a small button on the exterior of the device.
  - a. The button action forces chemical solution through a valve that directs the solution to the scrubbing pad surface.
7. Runoff water from the water-driven rotor and chemical solution from the scrubbing pad exit the device via a port at the base of the device.
8. Upon the completion of the manual cleaning process, brushes can be clipped onto the device in an orientation that allows for organized and effective brush drying.

8 Claims, 6 Figures

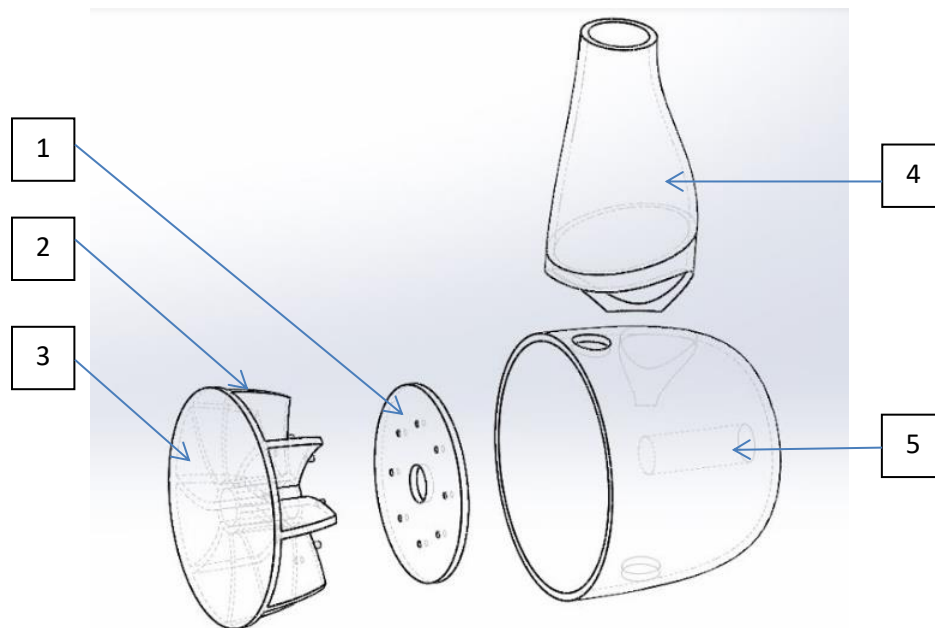


Figure 1 – All Components

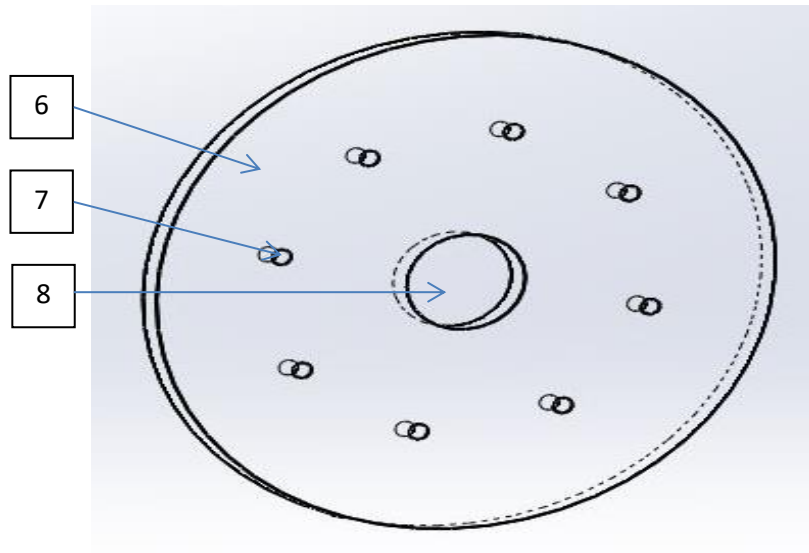


Figure 2 – Wheel Backing

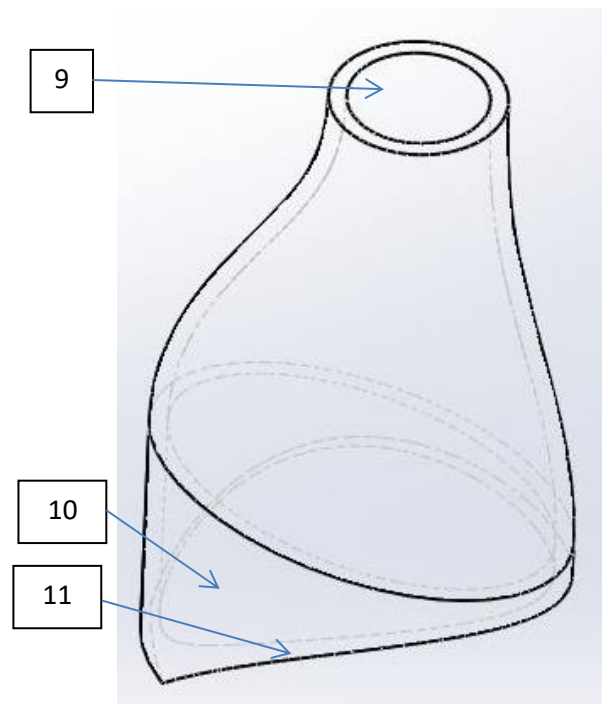


Figure 3 – Water Splitter

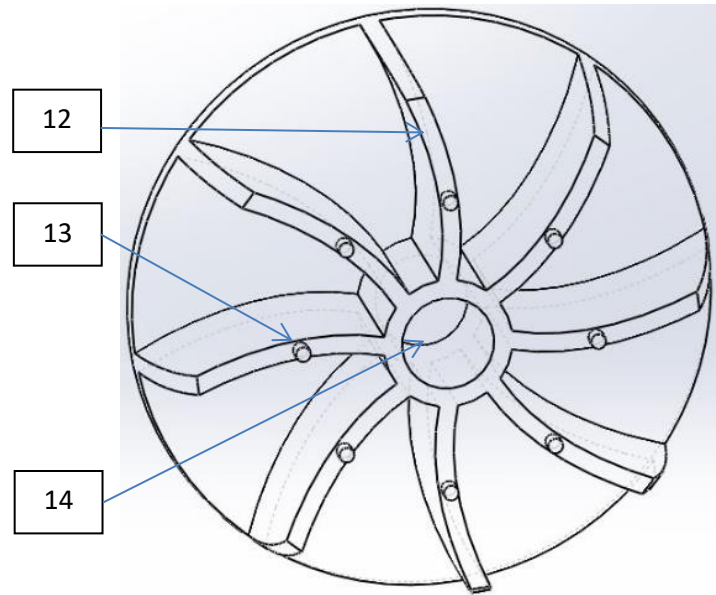


Figure 4 – Water Wheel

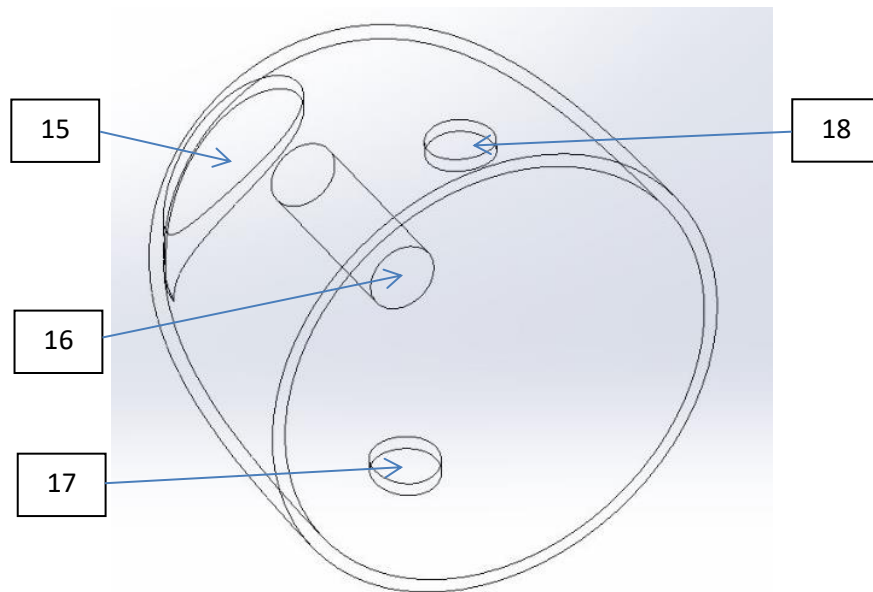


Figure 5 – Rinse Cup

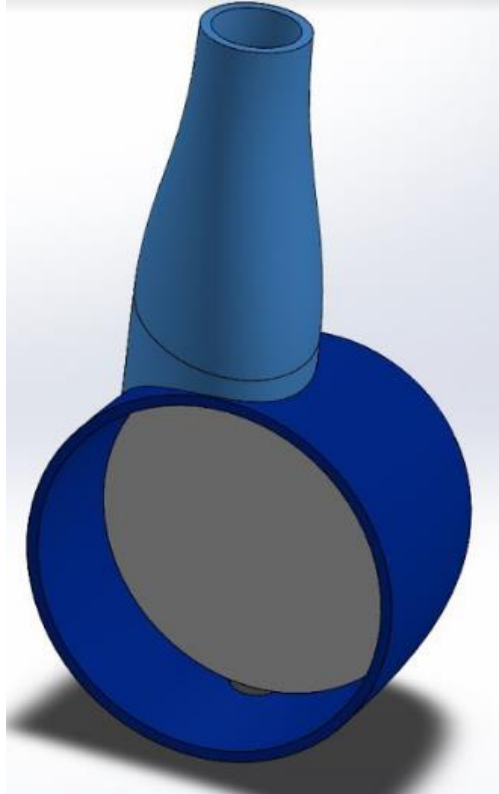


Figure 6 – 3D model

## Description of Drawings

Figure 1 – All Components

1. Wheel backing - The wheel backing serves as an impermeable layer capable of keeping water within the water wheel rotor system. In order for the water wheel to spin, adequate pressure must be applied to the rotors. This wheel backing helps contain the water within the wheel, thus allowing sufficient pressure to be maintained for rotation.
2. Water wheel – This rotor-like device is designed to rotate as incoming water exerts pressure. It is meant to mimic the functionality of a turbine found within a hydroelectric dam. The rotation of this component translates in a rotating scrubbing pad on the exterior face of the device
3. Scrubbing pad – This pad serves as the primary location for brush cleaning. During use, due to the rotation of the water wheel and a flow of incoming water, this scrubbing pad will be both wet and rotating. This provides a dynamic surface for brush cleaning.
4. Water splitter – This simple component directs water through two ports. One port channels water toward the rotors within the water wheel. The second port channels water onto the surface of the scrubbing pad.
5. Rinse cup – The rinse cup is the main component of this device. It is meant to be held with one hand on the side opposite of the scrubbing pad. The cleaning of brushes is intended to be conducted with the user's other hand. The rinse cup has a spout at the base of the component that drains water from the device.

#### Figure 2 – Wheel Backing

6. Wheel face – This face serves as a barrier to keep water contained within the water wheel component (as described in the first description under Figure 1).
7. Pin hole - These pin holes allow for the water wheel to be securely fastened to the wheel backing. The pins on the water wheel perfectly fit into these pin holes and provide a sufficient amount of friction to hold the two components together.
8. Peg hole – This hole is designed to allow the rinse cup's rotation peg to pass through the wheel backing and into the water wheel.

#### Figure 3 – Water Splitter

9. Faucet connector – This connector is design to adjoin directly to a hose to provide a water supply for the device. This hose has a universal faucet attachment that is capable of supplying water from most faucets.
10. Splitter – This large opening at the base of the faucet spout is intended to let water flow towards the water wheel port and the pad rinse port. This opening allows for water to come into contact with both ports located on the surface of the rinse cup. Within the body of the splitter is a soap dispensing reservoir. This reservoir activated via a push button, allowing for soap to be injected onto the surface of the scrubbing pad.
11. Curvature – The curvature of the splitter is exactly complementary to the surface of the rinse cup. With an addition of epoxy, this curvature allows for a tight seal between the splitter and the rinse cup.

#### Figure 4 – Water Wheel

12. Wheel rotor – These rotors are responsible for catching water and being pushed by the resulting water pressure. As water flows through the water wheel, these rotors allow for the entire component to spin upon the rotation peg.
13. Wheel pin – This pin is designed to allow for the wheel backing to securely fasten to the water wheel (as described in the 7<sup>th</sup> description under Figure 2)
14. Peg slot – This slot is designed for the insertion of the rinse cup's rotation peg. The rotation of the water wheel will be allowed by the insertion of the rotation peg into this slot. This peg slot is composed of a material that results in low friction between the rotation peg and the water wheel.

#### Figure 5 – Rinse Cup

15. Water wheel port – This port allows for water from the splitter to be guided to the water wheel.
16. Rotation peg – This peg serves as the structure on which the water wheel will be in held in place by and rotate on. This peg is designed to be sturdy enough to withstand the force of the brush cleaning process occurring on the scrubbing pad as well as the friction forces resulting from the rotating water wheel.
17. Drain spout – This spout is a hole that drains water from both the scrubbing pad surface and the water wheel. The draining water is intended to drop into a sink.
18. Pad rinse port - This port allows for water from the splitter to be guided to the scrubbing pad face.