


Cesar Felipe: Morphological Analysis

Team: P21325







Concept 1:

Function	Idea	
Secure Pump Parts in Place	Vacuum	
Interpret User Interaction	Push to start button	
Wash Pump Parts	Spin and Wash	
Sanitize Pump Parts	Antibacterial Cleanser	
Dry Pump Parts	Air dry w fan	
Notify User Cleaning Is Complete	Sound Alarm	

Rationale:

I believe a vacuum is not a bad idea for securing the pump parts because a vacuum can hold down the pump parts in a fixed spot throughout the entire cleaning process. This ensures the part will not fall out of place. I also think a push to start button may be all we need in terms of interpreting user interaction since we are only cleaning the same few pump parts. It doesn't make sense to have multiple settings for the machine if we're only cleaning the same few things. Spin and wash made sense for the washing function as it will allow every spot on the pump components to be exposed to water. Regarding sanitization, antibacterial cleanser made the most sense to me as it is easily refillable and reliable for killing germs. The fan seemed like an easy and simple method of drying the pump parts. Finally, it seemed like the easiest and way to notify the user that cleaning is complete was through a sound alarm. These are used on many other devices to signal that a process is complete (microwaves, toasters, washing machines, etc...) so it makes sense for it to work here too.

Concept 2:

Function	Idea	
Secure Pump Parts in Place	Clamp	
Interpret User Interaction	Twist Timer	
Wash Pump Parts	Scrubbing system	
Sanitize Pump Parts	UV light	
Dry Pump Parts	UV light	
Notify User Cleaning Is Complete	App notification	

Rationale:

Clamps can be designed in a variety of ways. It might just be easier to design a clamp that works specifically for our pump parts. A twist timer seems like a good idea for interpreting user interaction as it allows the user to specify how long they want their cleaning process to be. Depending on the state of the pump parts, either more or less time will be needed for cleaning. A scrubbing system seemed like a good idea for the washing function as it can be implemented without taking up as much space as a spin and wash. As for sanitizing and drying the pump parts, both these tasks can be completed through use of UV light. This can significantly reduce the overall cleaning time by turning two different processes into one. Finally, when the cleaning process is complete, it may just be easier for the device to send a notification to a phone app. Not everyone is going to be sitting next to the device waiting for it to finish cleaning, so having a reminder pop up on your phone seems like a good way to notify the user that their breast pump parts are clean.