Fidget Cleaner

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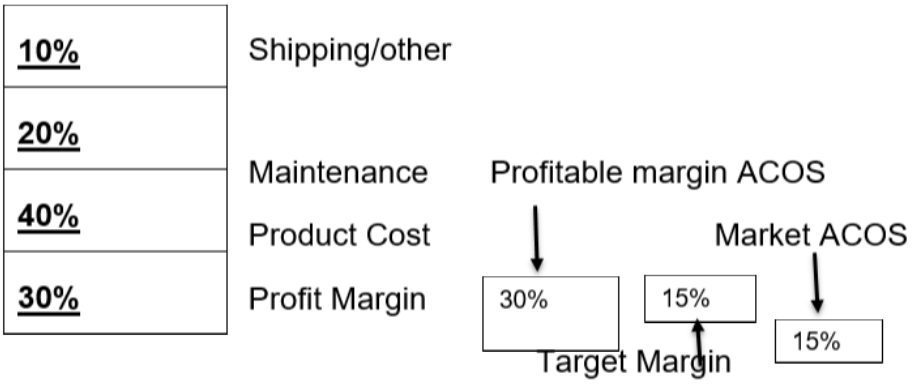
0.1 Introduction/Motivation

Ceiling cleaning has always been a tedious job. The health of the cleaning staff is compromised and over a long time it may lead to serious health issues. The efficiency for the same is also very questionable as it is not really possible for the workers to clean frequently and with the same efficiency. Cleaning the ceilings regularly, manually is also not very practical and there are no services that provides solution to this issue. Hence a solution addressing the issue of regularly and efficiently cleaning of the high elevated ceiling is proposed.

0.2 Market Research / Literature Survey

FIDGET CLEANER has huge great market available already. Although being a huge market FIDGET CLEANER has a minimal competition as no such technology has been introduced in the market yet. The available solutions to the problem statement stated above are a high labour required, less efficient and also average health affecting solutions. As there being no great competition, the growth of FIDGET CLEANER is expected to reach heights as it effects the efficiency and the average health of the workers working there. FIDGET CLEANER would target a specific class of people like the workers working in a high elevated ceiling places or companies offering cleaning solutions or services to others. FIDGET CLEANER have a high market profitability as then competition is less and demand as comparatively is high. It can also have a profitable margin upto atleast 30%, as it involves new technology to the traditional way of cleaning and also increases the efficiency and also doesn't effect the health of the workers in the long run.

0.2.1 The Cost Structure



heightheight

Figure 1: Market Analysis

0.3 Implementation

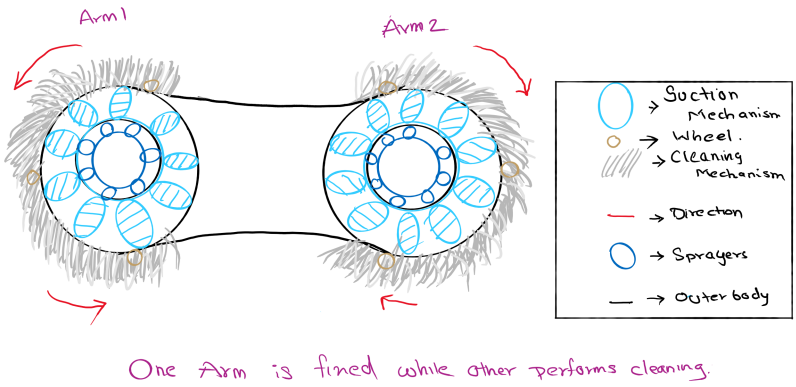


Figure 2: Basic Design 1

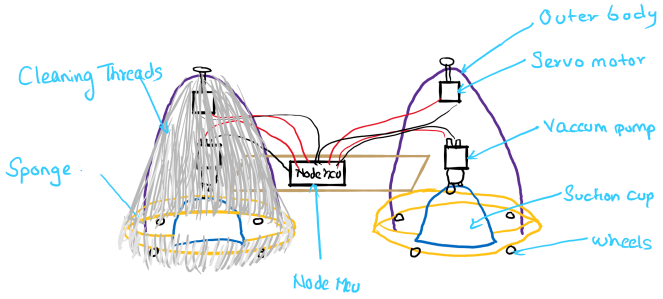


Figure 3: Basic Design 2

0.4 Flowchart

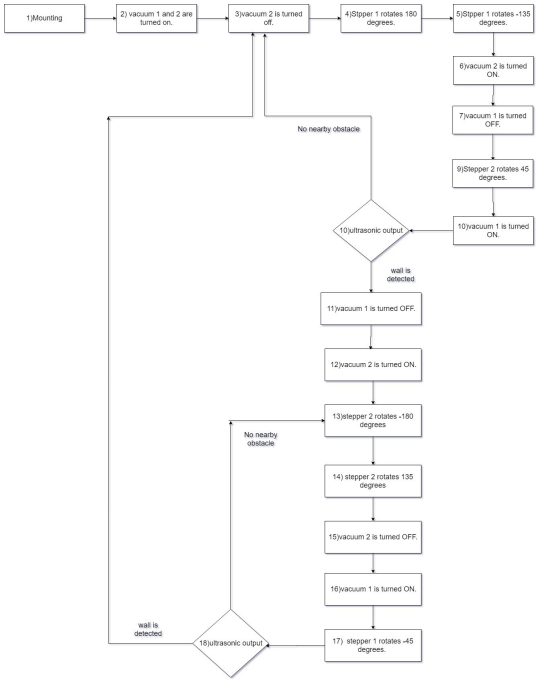


Figure 4: Flowchart

Fidget Cleaner consist of 2 arms. These arms consist of suction mechanism created using vacuum pump. On mounting this device on ceiling the Arm 1 and 2 vacuum will be turned ON. Vacuum 2 voltage will be reduced and steeper motor 1 starts its rotation. Arm 2 will start moving and cleaning the area around 180 degree. After rotating 180 degree the rotation is reversed and it rotates negative 135 degree. Now Arm 2 vacuum will be turned ON and Vacuum 1 voltage will be reduced and stepper motor 2 will rotate 45 degree and Arm 2 will be parallel to arm 1 at this stage. This procedure is repeated till the ultrasonic sensor detects an obstacle. On detection of an obstacle, the cleaner will use the same algorithm to move sideways by 180 degrees. And the exact opposite procedure begins. This will help cleaning the celling upside down in 2 dimensional aspects.

0.5 Feasibility

As per the current market scenario there is no such automated product available that could clean the ceilings. Traditional method of mob cleaning is used for the same. Fidget cleaner using suction mechanism cleans the ceiling. The suction mechanism helps the fidget cleaner to hold on to the ceiling. With changing the voltage And help of the steeper motors the product traverses the entire ceiling and cleans the inaccessible corners with great ease and efficiency. This product will be a table turner in the market and with slight changes it will be able to clean the ceilings as well as the floor.

0.6 References

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