

“Design And Development of Soap Bar Dispenser”

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Abstract— *Due to current pandemic situation it has been necessary to wash our hands rapidly with soap bars. But washing hands with soap bar put up a question on complete hygiene, as every time an individual wash his hands with soap bar it has been already touched by many other individuals and even it is left wet all the time causing it to continue to shrink. So, to overcome this condition we came up with a design and analysis of cost-effective soap bar dispenser that will generate small flecks of soap bar for hygiene wash and save up the soap for long time of use.*

Keywords—*soap bar dispenser, soap bar, hygiene, pandemic.*

Introduction

Current pandemic situation made necessary to wash our hands rapidly with soap bars. But washing hands with soap bar put up a question on complete hygiene, as every time an individual wash his hands with soap bar it has been already touched by many other individuals and even it is left wet all the time causing it to continue to shrink. So, to overcome this condition we came up with a design and analysis of cost-effective soap bar dispenser that will generate small flecks of soap bar for hygiene wash and save up the soap for long time of use.

WHY SOAP BAR OVER LIQUID SOAP?

As we know soap bar is being used from past many years but in ongoing period liquid soap has taken a step over soap bar. Question comes is why people choose liquid so over so bar? Using a soap bar on created mess around, while using a soap bar it starts shrinking fast due to moisture and as a result there is a lot of wastage. whereas liquid soap is easy to use, maintain personal hygiene. But if we look out at soap bar use less energy to produce compared to liquid soap which also generates more plastic waste in the form of bottles and packages.

WHY PEOPLE DON'T USE SOAP BAR FOR WASHING HANDS?

- *As it always creates mess around.*
- *It shrinks fast due to moisture.*
- *Complete use is least possible.*
- *Handling is very unhygienic.*

I. PURPOSE OF WORK

The purpose of this project is to design a soap bar dispenser which will generate flecks of bar for washing hands, while considering the proper hygiene of an individual. It will also help in saving the wastage of soap bar cause due to shrinkage. It will also help to keep soap bar in use for long run than its normal usage period. It will save the extra cost paid for normal liquid soap which a middle-class family always pay for.

II. PROBLEM STATEMENT

Proper hygiene while using soap bar for washing hands. Cost-effective soap bar dispenser that will make complete use of soap bar without letting it be wet Liquid hand soap is the mostly used recent years, because it is seen as more hygienic. liquid soap contains many synthetic substances and preservatives. Many times, it requires buying a new plastic bottle or refill bottle every time, resulting in a lot of plastic waste. Overdosage is also a common problem since the dispensers often release too much product than is needed.

III. SOLUTION

To over come the above problem and customer needs the team came up with a decent solution to increase the usage of soap bar. team decided to create a dispenser which can provide flecks (shavings) of soap bar. it should be able to load with soap of different shapes and size and provide proper handwash. This can provide a good alternative over liquid soap and can reduce plastic waste too.

Team also took in consideration about the unsanitary concerns of users to eliminate direct contact with bar, so the soap bar can be used completely without touched, shrink clean and tidy.

IV. METHODOLOGY

The project intended to use an CRC sheet body structure as prototype model. There will be a stainless-steel grater at bottom which will produce the flecks, to choose an appropriate design we did survey on the dimensions of soap bar mainly used for hand wash in India. After surveys and discussion, we came up with a design for the product

A. Construction

1. The dispenser contains a shape of rectangular container made up of CRC sheet as a prototype design.
2. It will contain a stainless-steel grater at bottom of dispenser, with a safety handle and springs for better return stroke use.
3. The grater will be place under the soap body container which will work as push liver mechanism.
4. The container will have a lid with spring attached to it to put some pressure on the soap bar to keep it stable inside the dispenser.

B. Cad modelling

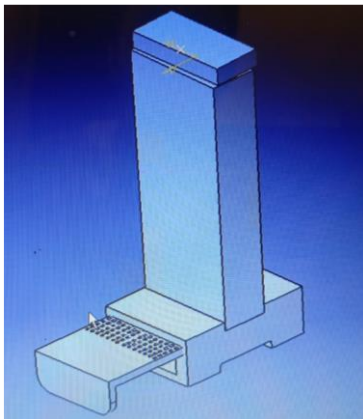


Fig. 1. Cad model of Prototype

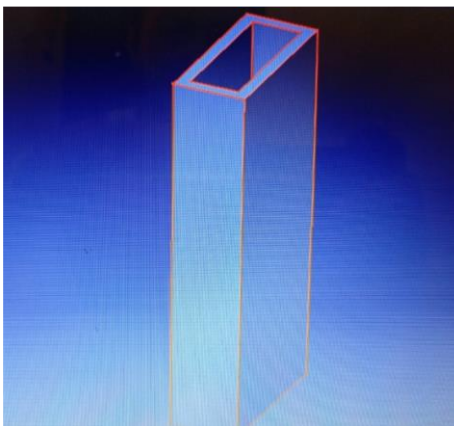


Fig. 2. Soap Bar container

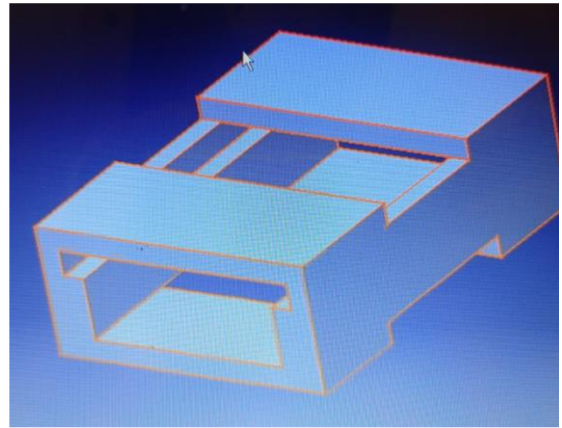


Fig. 3. Dipenser chamber

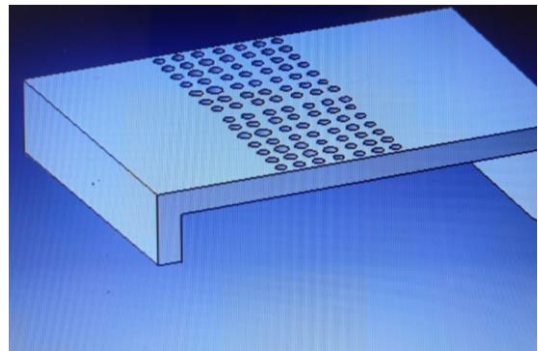


Fig. 4. Grater plate

C. Dimensions of model

1. Body : Height- 70mm ,length- 70mm, Width- 30mm, Thickness- 40mm
2. Dispenser Body: Length-120mm
Breadth-100mm
3. Grater: length- 100mm, Width- 30mm
4. Spring: length of wire-219mm, Diameter- 10mm, Wire diameter- 1mm

D. Prototype model



Fig.5. Finished prototype dispenser

E. Discussion

Team got favorable results after the successful testing of prototype many things came to consideration. As the design needed to be more compact and space saver. Different types of material have to be tested to make it look more better and modern. further team decided to look for a design with more compact mechanism.

F. Material selection

Material selection always based on the application where it is going to be used or applied.

As the product is going to be used in bathrooms and toilets so it should ensure that the material should withstand moisture. Material like stainless steel can be used for making the body.

G. Future scope

- Develop a new system for hand washing at home which encourages using bar soap
- User friendly for youngsters by making it travel friendly

CONCLUSION

To summarize, the final design is robust and functional, but further research is needed to ascertain whether it may fail to meet certain customer needs. Some areas need to be further investigated before the project advances to the next stage. Future work involves refining the design and testing it onsite.

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