

Automatic Ghee Making Machine

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ABSTRACT: Ghee (Sanskrit: Ghrta), is a class of simplified butter which was originated in India. It is commonly utilized in Middle Eastern cuisine, cuisine of the Indian subcontinent, Southeast Asian cuisine, traditional medicine, and non secular rituals. Ghee is mainly formed by ethnic methods in Asia, the Middle-East and Africa and therefore the methods of manufacture and characteristics vary. Traditionally, Indian butter has always been made from yogurt. When a plenty amount of milk cream has been collected, it is fermented then churned by mechanical shaking until butter granules are formed. In making butter from yogurt, the target of churning is to extract the utmost amount of fat by transferring the emulsion from oil in water to water in oil. This traditional method of "Batch Process" like pouring the buttermilk into the container to heat, heating the buttermilk, stirring it in a container, removing the waste product, collecting ghee. All this process had been done separately or manually.

Our project is different from that of the researches had been done earlier. In this mechanism we only have to pour the butter-milk in the stainless steel container. The heating and stirring of buttermilk takes place automatically. Also the removing and collecting of buttermilk has been done automatically and can be done in one container only.

I. INTRODUCTION

Ghee is a fat rich dairy product, broadly used in India since time centuries old. It has been a part of our culture. It is mainly used as food ingredient and as flavoring agent. Even today in systematized sector, ghee is manufacture in steam jacketed containers which essentially suffers from several disadvantages like low heat transfer coefficient, unhygienic

operation etc. Automation of ghee making overcomes many of the problems associated with conservative method but it integrates large surface area and large amount of manufacturing cost to build machine. In view of the above stated problem, we decided to design a mechanism which produces same quality of product, consuming least amount of capital so that it can usable for Domestic household purpose. It is an automatic machine which uses fresh cream or Curd (Yogurt) as it's raw material, giving us the product as Ghee. It reduces the man power by switching domestic Ghee making process with new automatic process. One of the main advantages is that the waste from the process is nothing but Butter milk which served as Beverage.

II. LITERATURE REVIEW:

1) Ghee Production Plant:- NIIR Project Consultancy Services.

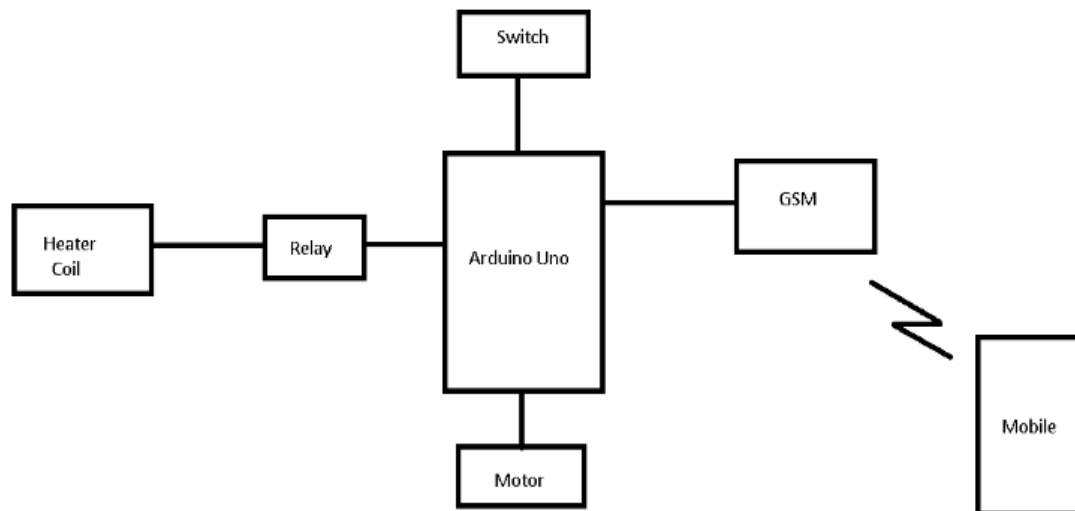
Their research reports mostly cover Indian markets, present exploration, outlook and projection for a period of five years. The market estimates are developed on the basis of secondary research and are cross-validated through interactions with the industry players. They used reliable sources of information and databases. And information from such sources is processed by them and included in the report.

2) Automatic Bilona Ghee Making Machine

To explore the technology according to women's necessities and capabilities. To evaluate the struggle of the women with respect to income generated. To assess the design of the technology in terms of performance including the practicality, production rate and hygienic issues taking into account men's & women's perceptions. To study the potential of improving the technology to increase productivity and consequently increase

daily income taking gender aspects into account.

III. BLOCK DIAGRAM:



The block diagram of ghee making machine consists of the following components:

1)Arduino UNO

Arduino UNO is the main component of the ghee making machine. The Arduino UNO is connected to the switch, relay ,motor and GSM module.

2)Heater Coil

A heating coil gets powered normally through electricity. When the coil is charged with electric power, it becomes red hot and provide heat to the container. Heater coil is connected to relay.

3)Relay

Relay is a type of switch .It connects or disconnects two circuits. But instead of manual operation a relay is directly applied with electrical signal, which in turn connects or disconnects another circuit.

Relay works on the principle of electromagnetic induction. When the electromagnet is applied with some current it induces a magnetic flux around it. And here relay is connected between heater coil and Arduino UNO.

4)DC Motor

A DC motor is a class of rotary electrical motors that converts current electrical energy into mechanical energy. DC Motor is connected to the Arduino UNO .

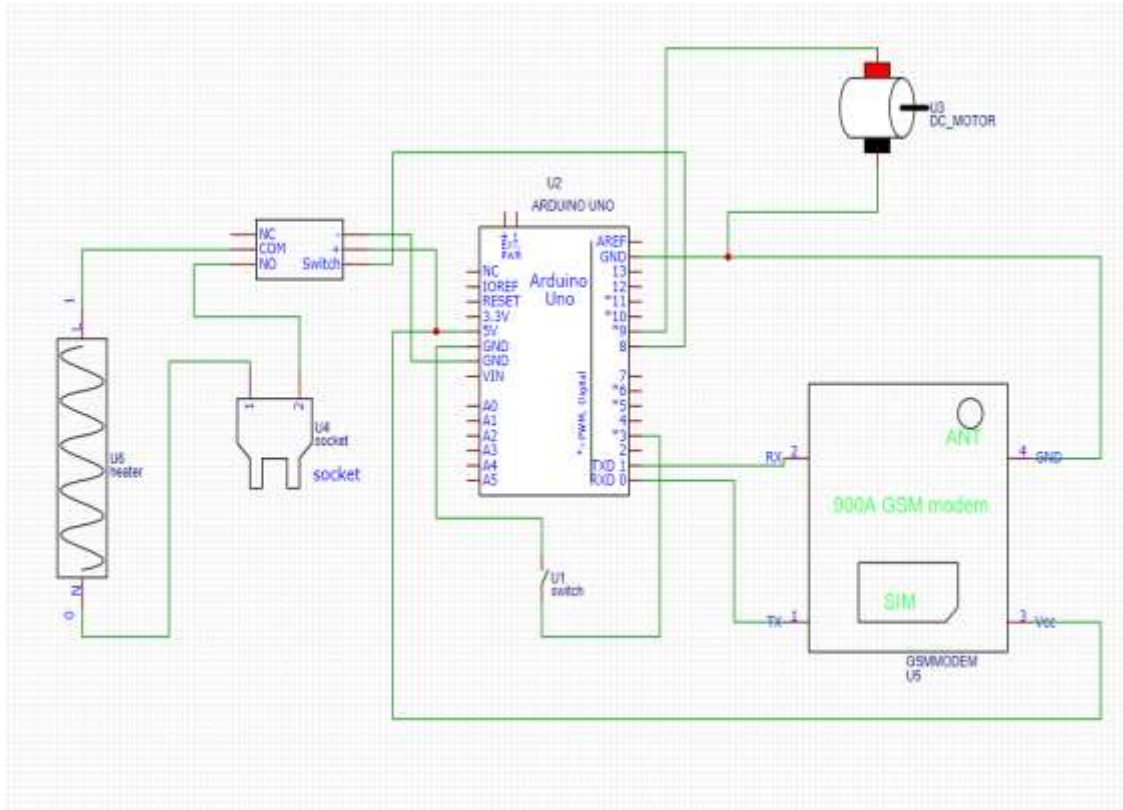
6)Switch

Switch is connected to the Arduino UNO.

7)GSM

GSM is a mobile communication modem which stands for global system(GSM). The concept of GSM was developed first at Bell Laboratories in 1970. It is a widely used and extremely possible for using mobile communication system in the world. As GSM is an openly and widely technique for mobile communication system and digital cellular technology it is used for transmitting mobile voice and data services operating with the ranges of at the 850MHz, 900MHz, 1800MHz, and 1900MHz frequency bands. GSM technology was started as a digital system using the time division multiple access (TDMA) technique for communication purposes. A GSM reduces the data, then sends it down through a channel with two different streams of client data, each in its own particular time slot.

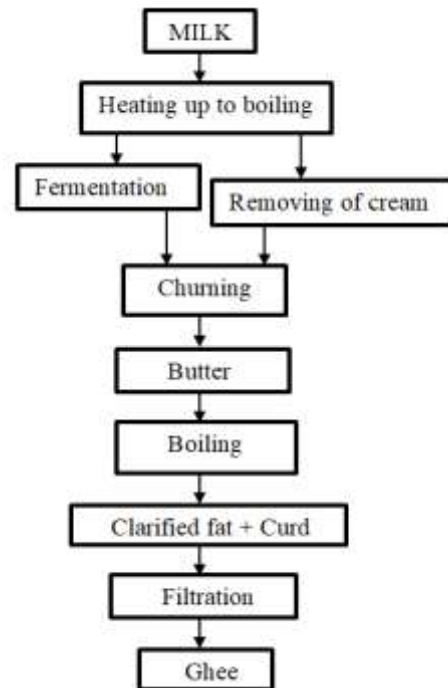
IV. CIRCUIT DIAGRAM:



V. WORKING:

First as an input we need to pour the milk cream in a container. Then we need to add the cold water and then stir the mixture with the help of rotating shaft. By continuous stirring of the mixture the layer which gets accumulated on the upper surface of the mixture is a raw material which will be using for preparation of the ghee. And with the help of solenoid valve the waste water get removed. The user gets the message that the stirring process has been completed.

Now the heating of raw material starts and we get the alert message that heating process will start in container. After a particular time the heating process stops and we get the notification of the completion of process and we get the final product ghee which we need to filter manually.



VI. RESULT:

- Motor will work as a mixture to mix the substance.
- After particular time motor will be turn off automatically and message will send to user .
- If user want they can turn off heater process.
- After particular time heater will start heating (water heater) automatically.
- After particular time heater automatically turn off and again message send to user to notify process is completed.

VII. CONCLUSION:

2-3 kg ghee making machine is actually for women who are living in rural areas. It is usually seen that ghee making machines are of larger quantities and rural women cannot afford the large machines. So we decided to empower them by giving approach to small machines to churn ghee and support the economic conditions of their families. This machine is basically based on the old process of ghee making and each every step is carried out in one machine which reduces the effort and time consummation. . Fat loss during processing are drastically reduced in comparison to earlier method. Ghee made by this process has no more residues other than ghee fat. Innovated method has less scraping in ghee boilers tanks to less ghee residue.

VIII. ACKNOWLEDGEMENT:

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