Automatic Chapathi Making Machine

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Abstract: Our project is to make fully-automatic chapathi maker. Here we used pneumatic system since pneumatic has gained a large amount of importance in last few decades. This importance is due to its accuracy and cost. The pneumatic pressing machine has an advantage of working in low pressure. It consists of Pneumatic cylinder, Control unit, solenoid valve, 3 phase ac motor, and Maker parts.

The main objective of our project is to pneumatic chapathi making machine with the help of pneumatic sources. For a developing food product industries, hotels the operation performed and the parts (or) components produced should have it minimum possible production cost, and then only industry runs profitability.

I. INTRODUCTION

We design and manufacture a mesmerizing range of manual to fully-automatic Chapatti Making Machine to impart much of the relief to the workers in the preparation of the meals in various Departments of Institutes, Lingers, Hospitals, Schools & College Hostels, Industrial Canteens and Railway & Defense Establishments. Our chapathi making machines help in making home-like chapattis in most hygienic manner. Apart from this no oil is required for the preparation of chapattis. Thus, our chapathi making machines offer oil free chapattis at economical prices.

II. LITERATURE REVIEW

1) K.Venkateshmurthy Department of Food Engineering, Feb 2008 in International Journal of design and manufacturing Technology. He studied heat transfer equipment for production of Indian traditional foods. In his study he explained about needs of new technology for making chapathi since as traditional staple foods in India, Chapathi stand next only to cooked rice. The successful operation of chapathi making machine depends largely on the kinematics of machines. The heat transfer across the hot plate of the machine such as stainless steel, aluminium plate etc.

2) T. R. Gupta in Imperial Journal of Interdisciplinary Research, page no 1050. He Investigated Specific heat of Indian unleavened flat bread (chapathi) at various stages of cooking. In case a device is made available for making Chapathi, from dough mixing to baking/frying, would result in reduction in labor and difficult to cater to large number of people in short time in serving Chapathi of uniform quality.

3) Arun Kulamarva in International Journal of Manufacturing, page no 759. He studied some rheological and thermal properties of chapathi. Chapathi is a gluten free cereal and forms the staple diet of a majority of the populations living in the fully-arid tropics dough.

4) N.D. Amosb studied compilation of correlation parameters for predicting the enthalpy and thermal conductivity of solid foods within the temperature range of -400C to +400C. He presented thermal conductivity data for 40 foods, enthalpy data for 58 foods and products.

III. METHODOLOGY

Problem identification
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Block diagram
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Design diagram
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Design calculation
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Working plan
↓
Cost estimation
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Result and conclusion

IV. DESIGN
V. WORKING PRINCIPLE

The main objective is to designing and developing a very compact, chapatti making machine. Initially the control unit operates the compressor which delivers the air to the solenoid valve at certain pressure. The solenoid controls the flow direction of air to the pneumatic cylinder. Thus the reciprocating motion of the pneumatic cylinder creates high force to punch the object. This part consists of two parts one is fixed at the base and other is fixed at the end of piston rod. This part is moved up and down to provide the force on the object. These machines are pneumatically operated and are very simple to operate. It need a separate compressor. 3 phase ac motor and pushing plate of after pressing the chapathi to collecting operation. The output of our chapatti making machines is very high and the labor component involved is very low due to which the cost of production is much lower. This continuous operation of fully automatic chapathi making machine. It occupies less space and it is easy to clean and operate.

VI. RESULT

Our project is best suitable for hotels, college hostels. This machine meets the requirement of more productivity of chapattis.

- It reduces the human interference.
- It increase human comfort.
- Its work efficiency is high.
- It is easy to operate and use.

VII. CONCLUSION

The project carried out by us will make an impressing mark in the field of restaurants. The time making for chapathi in this machine is less compared to the manual work. It is very usefully for the workers to carry out the operations in a single machine.

This project has also reduced the cost involved in the concern. The smoothness of the chapathi is high. The project has been designed to perform the required task taking minimum time.

REFERENCES

[2]. Indian Standards Institution Vermicelli making IS (1485-1993) vol.6, pp.147-159