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Low Cost Noodles Making Machine

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Abstract: ***This project aims to assist people in making noodles easily, quickly and on a wider scale. The primary stage of the project with brainstorming, visualizing the thought, forecasting all our needs within the project and deeper research was held between all competitive noodle machines within the market. Proposed Noodle machine with compact Design, portable and operated by the only person. Extrusion of noodle at shaping die by endless feed of dough within the hopper which is pushed towards shaping die by thread conveyor to realize the specified shape of noodle. Design and development of noodle machine by integrating all ideas together and testing of Automatic noodle machine which is operated by DC-power source.***
Keywords: Instant noodles, processing, quality, nutritional aspects

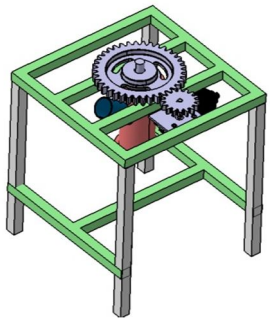
I. INTRODUCTION

The popularity of noodle are often attributed to its sensory appeal, versatility, low cost, simple preparation, nutritional content and excellent storage stability also as increased consumer interest in ethnic foods within the western world. Noodles are a value-added item made from flour. As regular breakfast item. The staple required for creating noodles is available in the local market. It is widely used by school children for breakfast because it takes less time for preparation. The demand for noodles would be mainly from urban areas and other people are relatively hard pressed for time. Besides, after the launch of Maggie a well-liked product, a distinct market segment which has emerged is school children and college students. Choosing a right machine is extremely important in any type of manufacturing business. A wrong selection of machine may damage the quality and profitability of the product. A product development process is that the set of activities beginning with the perception of a market opportunity and ending within the production, sale and delivery of a product. Product development is an interdisciplinary activity requiring contributions from nearly all the functions of a firm however Marketing, Design and manufacturing are almost always central to a product development. Design & developed of Semi-automatic and fully-Automatic noodles making machines that is best suited for mass production.

II. METHODOLOGY

1) *Step 1:-* Identification of problem: In our institute workshop, a convectional power hack saw machine is used for cutting the metal rod of material Mild steel. Total time required for a single cut-off is 15 to 20 minutes. Material handling of stock job is done by workman. Overall process is manual.
2) *Step 2:-* Design of Mechanical Part: This phase involves the design of various elements such as shaft & gear.
3) *Step 3:-* Design evaluation on paper manual drawing for fabrication purpose and selecting dimensions
4) *Step 4:-* Fabrication: All the designed elements are manufactured in the workshop such as frame, shaft as per design and also select the part as per specification for e.g. support rod etc. frame, are manufacturing in workshop.
5) *Step 5:-* Assembly: All the manufactured and selected parts are assembled together.
6) *Step 6:-* Testing and trial and error devolvement of project model.

III. PROPOSED CAD MODEL



Before starting with the proposed concept noodle machine we tried with different models of concepts operating on hydraulic power, pneumatic power with rack and pinion arrangement which has its own pros and cons. Finally, we choose the machine operated by DC motor which is portable, lightweight, durable and cheap.

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IV. MATERIAL DESCRIPTION

There are different parts used in the Noodles machine as shown below:

1) *Motor and Battery:* 2SW60 wiper motor operating at the 3.5A current & 12V power which has output rotating speed of 60 rpm with rated Torque of 13Nm

P=V X I =12x3.5= 42W

Choice of Motor supported the need for the task, it's provided variable speed, low initial cost, high durability, simple control of motor Velocity. Simple mounting mechanism with 3 holes as shown. But these motors with a high maintenance cost due to its internal gear mechanism.

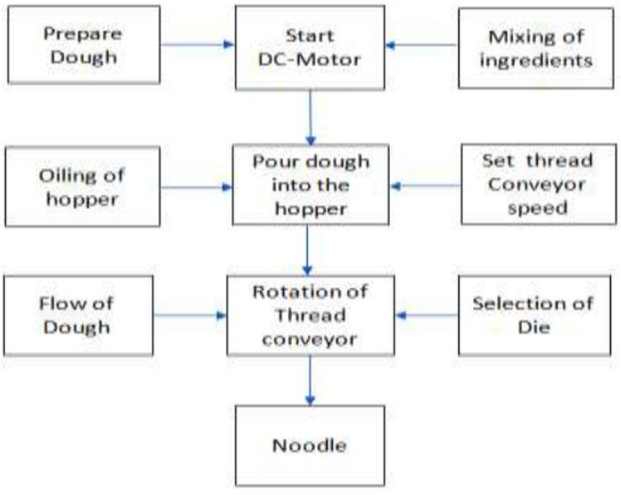
HP12075, 12V.7.5 AH/20hr battery Specification used as an input power supply to motor.



2) *Screw ROD:* Screw rod plays a major character in the noodle making task which pushes the dough towards the shaping die, thread rod is made up of stainless steel with uniform pitch.
3) *Gear Sprocket:* Driven (67-tooth) and driver (11-tooth) sprocket gear ratio1:6 which controls the speed of the thread rod lead to uniform extrusion of noodle



V. SEQUENCE OF OPERATION



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VI. SCOPE FOR FUTURE WORK

The successful implementation of continuous noodles making will increase productivity and reduce the man power require for the convectional machines. The machine is to be made remote operated in its operation; it will give consistent output of required jobs with good consistent results. Motors are used to make the operation automatic, there are gear reduction used to make the torque for the rotary plunge of machine.

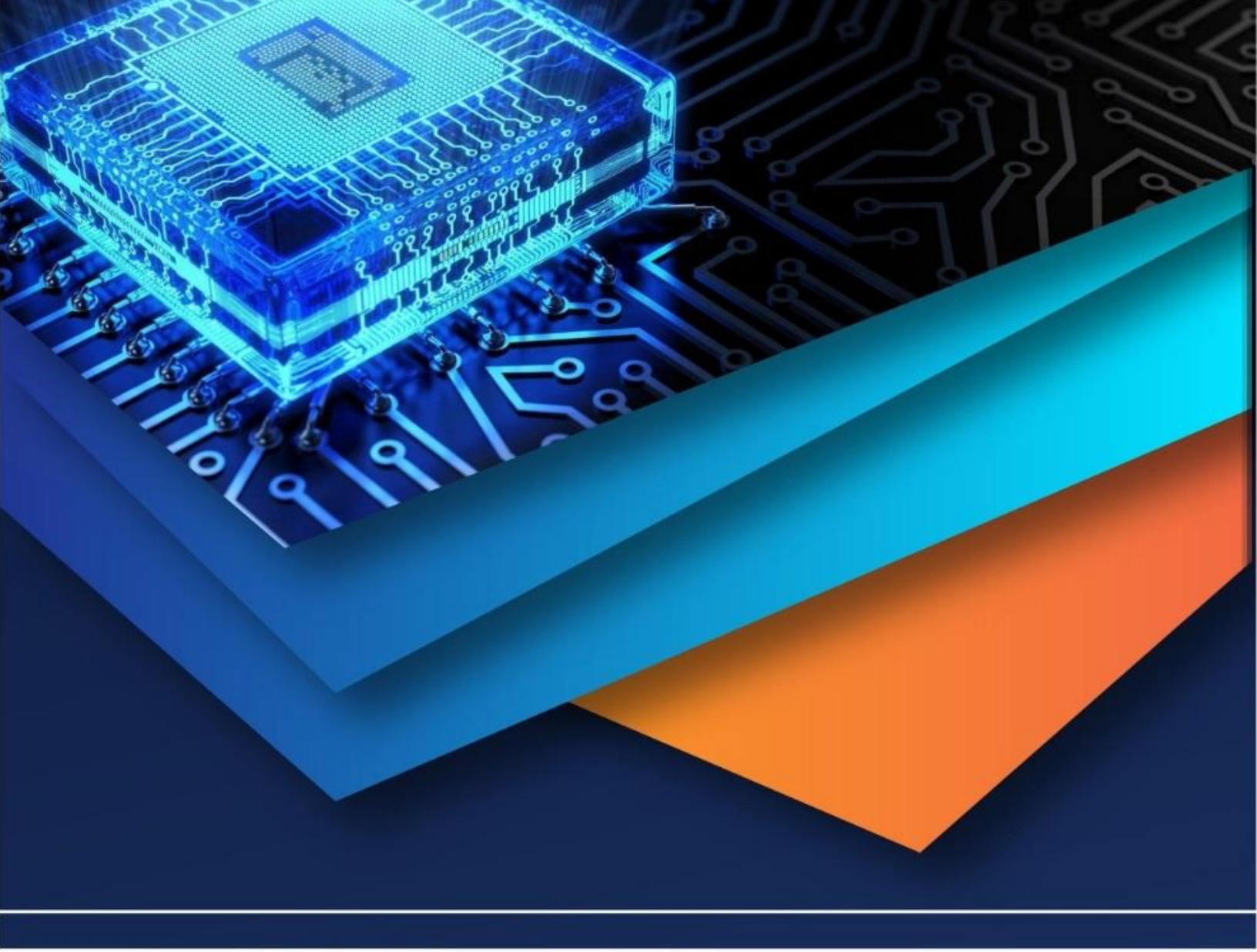
VII. CONCLUSION

There are differing types of manual operated, semiautomatic, automatic noodle machine available within the market. All the machines have its Advantages and drawbacks to every other. Operated by hand machine needs high required operate and multiple people to handled machines. In Automatic noodle machines, right proportion of flour and water ratio is predefined for the machine before feeding to the blending container. From a spread of noodle machine this project proposed to present a replacement semi-automatic noodle machine with real dimensional model. It is an easy switch control mechanism that operates complete design. This machine utilizes an easy mechanism compared to other machines, cheaper components, easily detachable and portable device.

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