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Design & Development of Variable Size Paneer Cutting & Packaging Machine for a Small Scale Industry

Kunal vinod Tundalwar[1], Aditya Diwedi[2], Gajanan Jadhav[3], Rakesh Madankar[4]

Student, Department of Mechanical Engineering, J.D.I.E.T, Yavatmal, India [1, 2, 3, 4]

Abstract: The economic downturn is among the worst enemy to all of mankind. The unstable economy performance also causing industries to collapse especially the low and medium ranged firm. This would much affect the increment of food prices and all groceries that available in the market. This would tighten up our budget and might as well affect our health and lifestyle indirectly. Hence, the purpose of this project is to design of a semi-automatic low cost paneer cutting and packaging machine. Most of the food processor available in the market is imported and costly as well as additional manpower and time consumption caused by manual processing. The development for this machine begins by indentifying problems that occurs. Then, studies on the food processor available in the market as well foods which are directly related are next in line. Then only the machine is design based on the concept adapted from the problems Hence, the purpose of this project is to design of a semi automatic low cost paneer cutting and packaging machine for small scale industry

Keywords: downturn, processor.

I. INTRODUCTION

The development of manually operated slicing machine is necessary in order to produce machine that is portable and at the same time high in performance compare to its' size. Industries nowadays are trying hard to improve machine efficiencies to maximize outputs. The higher the efficiencies the more amounts of energy and cost are reduced. Hence, this will directly increase the profit. But, for manual machine wise, the higher the efficiency, the easier the machine would be operated for it requires less energy in this we will briefly discuss on foods which are directly related to the project and overview different types of cutting machine; manual or electrically powered with different cutting method in order to increase the production rate.

II. OBJECTIVES

The primary objectives, upon which, the present work is based are providing an alternative to the existing manual cutting system mainly, targeting the initial investment factor, and thereby eliminating the associated difficulties of manual vegetable cutting.3.

III. CONSTRUCTION AND WORKING

The conveyer belt and vertical blade are used to perform the critical roles of regulating entry of paneer and performing the cutting. The requirements of the two processes are different, and so are the specifications
This work consists of two major parts; one is the mechanical setup involving square cutting case and grid along with the supporting frame, while the other part is the electrical motor convey. The two parts, work with synergy, to perform the vegetable cutting process automatically. The entry of the paneer inside the cutting casing is regulated manually or through electric motor. The paneer place on conveyer which is in continuous motion blow the cutting grid. The cutting grid consists of stainless steel blades, which are placed in a mesh.

There are different tool of different shapes spaces between the cutting blades. The paneer are forced between the spaces, thereby getting cut for the same shape from one tool and then tool can change according to requirement. The whole process, is automated by, regulation of the amount of paneer cut, timing of the extension. The number of paneer entering the apparatus is regulated by conveyer belt. The bar mechanism, has an angled plate, which acts like a cup holding the blade at the above the conveyer. When paneer is released it reaches the cutting casing, and the stroke performs the cutting operation manually or electrically.

The pieces are of variable size and weight like 200gm, 500gm, and 1000 gm according to the requirement.

The mechanical setup and the electrical setup are shown in figure both mechanical setup and electrical setup, combine to work with synergy to exhibit the automated working of the cutter. The mechanical setup consists of a hopper case holder, a 45˚ angled plate, a square cutting case, and a square cutting grid. While, the electrical setup consists of an belt conveyer to move the paneer pieces.

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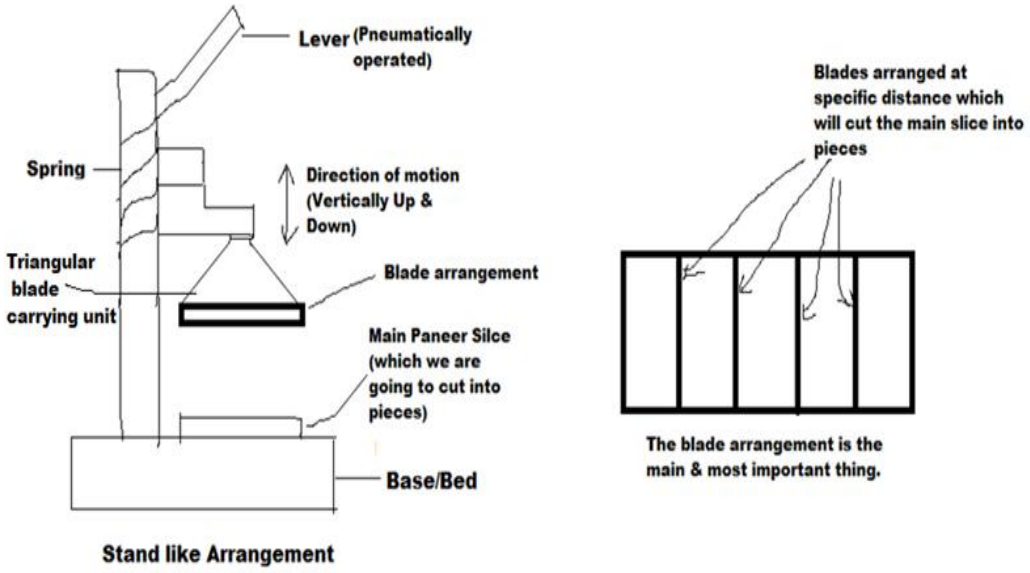

Fig-01 grid and conveyer arrangement

IV. PACKAGING

once the cutting of variable size paneer is done then the next section is packaging in which the paneer pieces are pack into plastics bag these pieces are entered into the plastic pocket manually the bags are then sealed pack through heating blade which heat up by electric circuit .

V. CONCLUSION

I. Thus, this work provides an alternative to the existing manually paneer cutting, in terms of automating the paneer entry into the cutting apparatus, eliminates power fluctuation and lesser initial investment.

II. Time consumption is less when compared to manual cutting. This work provides the desired output and the variety of the cuts is done by use of different cutting grid.

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