Semi automatic jar sealing machine to Design and fabrication of semi automatic plastic jar packaging machine.

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ABSTRACT

The production and circulation of the increasing socialization, modernization makes the product packaging has been rapid development. Packaging in the important position of the exchange of goods in the market has become increasingly prominent, has generally attracted the attention of people. Mechanization, the universal application of automation equipment, more dynamic in these areas, the packaging industry is no exception. Now most of the packaging process has been converted into mechanical operations by hand. This not only reduces the degree of labor, but also to speed up the production rate to improve productivity, but also to make the form of packaging in the continuous improvement, innovation, so that the majority of consumers are generally able to accept. This objectively promoted the marketing of products, improve the competitiveness of products in the market, but also can bring high profits for the enterprise. Through the comprehensive evaluation and selection of many kinds of schemes.

Plastics comprise one of the fastest growing material commodity markets. Over the last twenty years the sale of virgin plastic resin in Canada has increased threefold, with the primary end use being packaging. While the popularity of plastics has increased dramatically, policies and programs to ensure the proper management of this material, or the waste it creates, have not developed at an equal pace. Instituting policies and programs which embrace the principles of packaging stewardship, a concept in which producers assume responsibility for the impact their packaging has on the environment t throughout its life cycle, is one possible way to diffuse the negative impact of plastic packaging on the environment. The purpose of this thesis was to explore the different options for the stewardship of plastic packaging in Manitoba, with the final product being a model to guide the implementation of packaging stewardship in the province.

Keyword: - *Heating And Packed, Sandwich packing, Healthy and Safe Packaging,*

1. INTRODUCTION

Most of the mechanical structure and mechanism of the packaging is complex, and the movement speed is fast and the action with high requirements. The food and drug packaging machine is easy to clean with medicine and food hygiene and safety requirements. The working force of the packaging actuator is generally small, so the motor power of the packaging machine is small. Packaging machines are generally used continuously variable speed device, in order to flexibly adjust the packaging speed, adjust the packaging machine production capacity. Packaging machinery is a special type of professional machinery, a wide variety of production limited. In order to facilitate the manufacture and maintenance, reduce equipment investment, in the design of packaging machine should pay attention to standardization, versatility and versatility. High automation of packaging machinery, most of the PLC, SCM control, to achieve intelligent. Packaging machinery to achieve the specialization of packaging

production, greatly improve the production efficiency. Packaging mechanization reduces the labour intensity, improve working conditions, protect the environment, save raw materials, and reduce the cost of products. To ensure the health and safety of packaging products, improve product packaging quality; enhance the competitiveness of the market sales. To extend the shelf life of the product, to facilitate the circulation of products. Products using the packaging machine can reduce the area of packaging sites, saving infrastructure investment. Chinese packaging industry begin to grow in the 1980s. There was a scanty few of mushroom strains packaging machine applied in China, and lower efficiency than developed countries due to the lower starting point and smaller scale. Improving the degree of automation is the main tendency for the development of the packaging industry in the world. So the design of mushroom strains packaging machine is presented.

Packaging is necessary for commerce and virtually all goods. Industrial equipment, building materials, etc., require crating and often bundling to promote transportation. Examples abound: steel may be coated to prevent rusting; rebar's are banded together; girders are supported on wood. Taken as a whole, packaging could be the world's largest industry but it is classified as most of wood (pallets are the major use for wood), part of glass, plastic, paper, machinery, etc.

Packaging is the science, art and technology of enclosing or protecting products for distribution, storage, sell, and use. Packaging also refers to the process of designing, evaluating, and producing packages. Packaging can be described as a coordinated system of preparing goods for transport, warehousing, logistics, sale, and end use. Packaging contains, protects, preserves, transports, informs, and sells. In many countries it is fully integrated into government, business, institutional, industrial, and personal use.

They hold expertise in providing a performance oriented Automatic Plastic Packing Machine, extensively used for packaging applications. Owing to its quality attributes like service efficiency and robust construction, offered packing machine is widely demanded in several industries. Moreover, provided packing machine is also available in different specifications and models to cater diverse requirement of our clients. In addition to this, our quality experts check it on various industry defined quality parameters to ensure hassle free performance.

- Features
- High strength
- Corrosion resistance
- Precisely engineered

They have marked a distinct position in the market by offering superior quality Automatic Plastic Packing Machine that is manufactured using optimum quality components that are procured from certified vendor of the market. This machine is available in different shapes and sizes as per the application requirements of the clients and is used for packaging of kurkure, puff & cheese Ball, namkeen & mixture. Being client centric, we stringently check this machine to ensure its flawlessness and deliver it within the stipulated time-frame.

1.2 PROBLEM STATEMENT:

Design and develop a prototype model of showing the concept of plastic packing which will show the working of application of automatic plastic paper packing machine.
Also fabricate the model of the same which will show the working desired automatic plastic paper packing machine.
Some of the uprising entrepreneurs are facing limitations on their goal fulfilment of starting a packaging business due to high cost of packaging machines and packaging itself.

1.3 OBJECTIVE:

1. To reduce the man power in packaging field and to increase the productivity.
2. While progressing our project, we will gain the knowledge in the fields of Mechanical System.
3. The main objective of the project is to Design and Develop an Automatic plastic packing machine.
4. To design a machine that operates on simple mechanical principles for ease of operation and maintenance.

1.4 SCOPE:

Automation reduces the labour requirement. The machines are specialist for packing by suing roller in any kind of bottle. Depending on the length, shape can be done.

1.5 METHODOLOGY:

Design concept generation refers to the actual conceptual design where the design concept is an approximate description of the technology, working principles and form of the product. It has a detailed description on how the product will satisfy and meet customer requirements. Existing design constraints may even be solved by having a good development in the design concept.
For this project, many alternative concepts have been generated. The various generated concepts were then individually evaluated to find the most appropriate concept for the product. The concepts that gave the most advantages were considered as the best concept and a waits further evaluation. The product sketch for the chosen concept was further drafted.

2. Literature survey

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A great number of researchers have been made in the bid to provide proper finishing and packaging for products which requires foil seals. Applicable to plastic bottles and containers, foil sealing machinery is used in pharmaceutical, beverages, cosmetics, oils and chemical industries. This ensures reliable sealing, purity retention, Hermetic sealing, secure packaging, Easy peel off and leak proofing **[1]**

Paper versus Plastic in Packaging.

In selected packaging markets where paper and plastic compete, plastic will continue to increase its overall volume share as it makes further inroads into paper applications. Plastic's share of the market will expand more slowly than in the past decade, as a number of packaging applications are now fairly mature in terms of the share controlled by plastic. Nonetheless, material enhancements which enable extended shelf life and increased durability, along with reduced material requirements and the addition of convenience features such as reseal ability and steam cooking, will fuel continued opportunities for plastic packaging.

Effect of bar sealing parameters on OPP/MCPP heat seal strength C. S. Yuan1, A. Hassan2*

The effect of bar sealing parameters on the heat seal strength of oriented polypropylene (OPP)/metallic cast polypropylene (MCPP) laminate film was investigated. Based on the results obtained from the parametric study, a bar sealing process window was developed. All points drop within the process window are combinations of platen temperature and dwell time that produce acceptable heat seal. Optimum combinations are indicated by the lower border of the window. The plateau initiation temperature, Tpi of OPP/MCPP laminate film used in the present study occurred before the final melting temperature, Tmf of the sealant material. The highest achievable heat seal strength was at the plateau region, and the corresponding failure modes were delaminating, tearing or combine failure modes (delaminating and tearing). Minimum pressure level of 1.25 bars is necessary to bring the laminate interface into intimate contact in order to affect sealing.

3. PROJECT WORKING

A heat sealer is a machine used to seal products, Packaging and other thermoplastic materials using heat.

The direct contact method of heat sealing utilized a constantly heated die or sealing bar to apply heat to a specific contact area or path to seal together.

They use one or more heated bars, irons or dies which contact the material to heat the interface and form a bond.

The bars, irons & dies have various configuration and can be covered with a release layer or utilize various slick interposer materials (i.e. Teflon films) to prevent sticking to the hot tooling.

Heating coil:

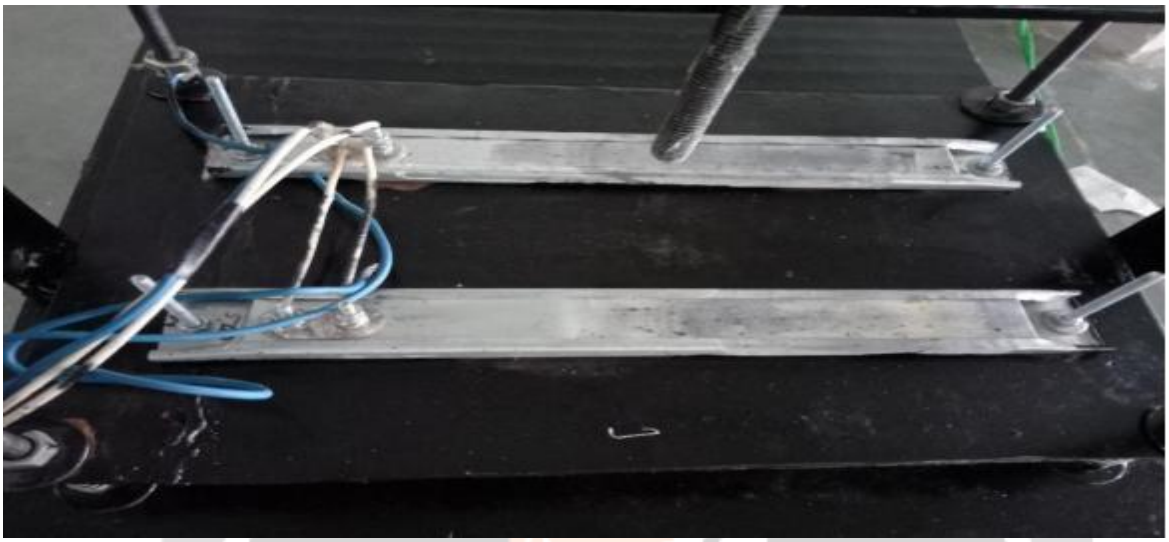

Fig.: 3.6 Heating coil

4. CONCLUSION

Plastic paper packaging machine, to solve the traditional manual packaging, saving a lot of time and labour problems, and the packaging speed, accuracy is also very good, practical, and the quality of the packaging out of good efficiency. Using CAD design software to the key parts of the packaging machine system is drawing, accurately describes the key dimensions of components and accessories, the design was checked and modified. To determine the relevant parts are coordinated, solves many of the problems need to be solved in the manufacture of the prototype before. In the case of no replacement of the functional components, only in the case of the appropriate adjustments to the different objects, different packaging requirements to achieve packaging. For example: how to further improve the reliability and coordination of the system operation, so that the system has a certain ability to the failure of the failure. With the expansion and efficiency of production, how to make the packaging machine has more scale and production efficiency, which requires more integration with the advanced mechanical components. This is the trend of the future.

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