

Automatic Paper Counting Machine

M.Kanagaraj, M.Karthick, S.Kumaresan

Mr.V.Ramkumar

Mechanical & Automation Engineering

Mechanical & Automation Engineering

PSN College of Engineering & Technology

PSN College of Engineering & Technology

Melathediyoor, Tirunelveli

Melathediyoor, Tirunelveli

ABSTRACT

The object of this project is to develop a Paper Counting machine to count the paper. The operation of paper counting machine is performed by using a D.C Motor, Paper feed Mechanism, counting proximate Sensors and Presetable timer. The paper is held at a paper tray, one end of which is passed through three guide-rollers. The Electronic Counter is used to counting the number of paper transferred to the collecting tray. The number of papers transferred to the collecting tray is adjusted by resetting the Electronic counter.

INTRODUCTION

The number of papers that are counted can be directly read on the Resettable count meter fixed to the frame stand. The paper counting machine can be operated by using a permanent Magnet D.C

motor. The machine is useful to count papers very accurately. The advantage of the machine is that it is portable and low cost machine.

LITERATURE SURVEY

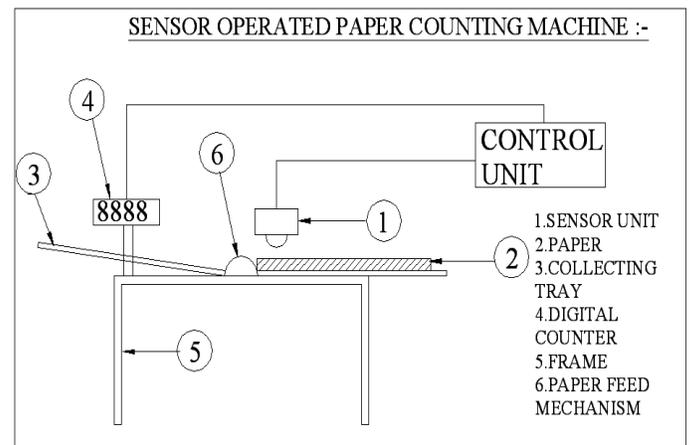
Anju et al. (2016) proposed counting machine uses the embedded system Arduino for the functioning of the machine, it utilizes a sensing technology to sense the count entered and sends the corresponding signals to the input stations of the IC in the Arduino board. The usage of Arduino board makes the machine more precise in functioning. The Arduino board on receiving the signals sends signals to input pins of a display which shows the number of the papers counted. The usage of Arduino makes the interfacing of the display and programming of the proposed project more favourable. The desirable count of papers can be counted out from a bundle by inputting the

number. The automatic paper counting machine finds a plentiful application in many fields and proposed as a remedial measure for the problem raised in the exam cell of the college (on counting papers like a question and answer sheets) which was displayed as a publication within the campus onvarious notice boards welcoming remedial measures. Shaikh et al. (2016) [3], describes an efficient automatic framework for detecting fake money notes. Also, it symbolizes a classification framework for linking original notes to their source printing presses. Experimental results the detection and classification frameworks have a number of accuracies

WORKING PRINCIPLE

Automatic paper counting machine proposes the idea of fast and efficient counting of paper without human effort. The proposed paper counting machine uses the embedded system Arduino for the functioning of the machine. It uses a sensing technology to sense the count entered and sends the corresponding signals to the input terminals of the IC in the arduino board. The

usage of arduino board makes the machine more accurate in functioning. The arduino board on receiving the signals sends signals to input pins of a display which shows the number of the papers counted. The usage of arduino makes the interfacing of the display and programming of the proposed project more convenient. The required count of papers can be counted out from a bundle by inputting the number



COMPONENTS AND DESCRIPTION

- Spur gear
- Roller
- Bearing
- Frame

- **SPUR GEAR**

Spur gears or straight-cut gears are the simplest type of gear. They consist of a cylinder or disk with teeth projecting radially. Though the teeth are not straight-sided (but usually of special form to achieve a constant drive ratio, mainly involute but less commonly cycloidal), the edge of each tooth is straight and aligned parallel to the axis of rotation. These gears mesh together correctly only if fitted to parallel shafts. No axial thrust is created by the tooth loads. Spur gears are excellent at moderate speeds but tend to be noisy at high speeds.

- **ROLLER**

A conveyor system is a common piece of mechanical handling equipment that moves materials from one location to another. Conveyors are especially useful in applications involving the transportation of heavy or bulky

materials. Conveyor systems allow quick and efficient transportation for a wide variety of materials, which make them very popular in the material handling and packaging industries

- **BEARING WITH BEARING CAP:-**

The bearings are pressed smoothly to fit into the shafts because if hammered the bearing may develop cracks. Bearing is made up of steel material and bearing cap is mild steel.

- **CONCLUSION**

This project work has provided us an excellent opportunity and experience, to use our limited knowledge. We gained a lot of practical knowledge regarding, planning, purchasing, assembling and machining while doing this project work. We feel that the project work is a good solution to bridge the gates between the institution and the industries.

We are proud that we have completed the work with the limited



time successfully. The **Automatic Paper Counting Machine** is working with satisfactory conditions. We can able to understand the difficulties in maintaining the tolerances and also the quality. We have done to our ability and skill making maximum use of available facilities.

REFERENCE

[1] R. S. Khurmi & J. K. Gupta., Machine Design, Manufacturing considerations First Edition.

[2] William Bolton, Mechatronics a Multi-disciplinary approach, Fourth edition.

[3] William Bolton., Mechatronics, a Multi-disciplinary approach, DC motor control PG 201-208

[4] Pugazhendhiran., Electric motors and Drives Control. EDC sixth edition.