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# Flower Knitting Machine

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ABSTRACT

Mankind has constantly strived to give life like traits to its artifacts in an effort to find substitutes for himself to carry out his orders and also to work in an antagonistic environment. The industry is poignant from current state of computerization to robotization in order to increase efficiency and to deliver uniform quality. This project presents automatic flower knitting machine using sewing machine and robotic arm principle. Initially the flowers are sprinkled into the vessel which is connected to the one end of the conveyor belt. The flowers can be passed through on the conveyor belt. Robotic arm is fixed at another end of the conveyor belt which is used to pick the flowers and placed on the sewing machine where it can be tied. Then the knot can be made by the movement of needle and the shuttle hook.

Keywords: Industry, Conveyor belt and Sewing machine.

## 1. INTRODUCTION

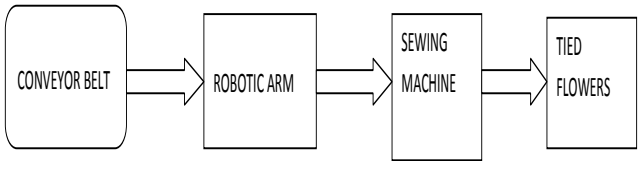
THE earliest known flower arranging dates back to ancient Egypt. Egyptians were decorating with flowers as early as 2,500 BCE. They regularly placed cut flowers in vases and highly stylized arrangements were used during burials.

### *1.1 Chinese Arrangement*

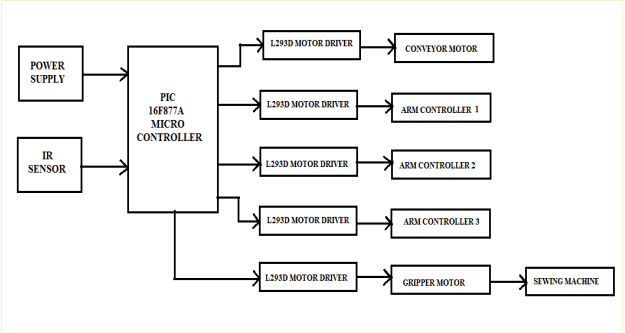
The Chinese were making flower arrangements as far back as 207 BCE to 220 CE, in the Han era of ancient China. Flowers were an integral component of religious teaching and medicine. Flower arranging arrived in Europe around 1000 CE, and was particularly popular in churches and monasteries where flowers and plants were used for food as well as for decoration. Among the various surveys there was no automatic flowers tying machine.

Flowers are generally tied in various steps they are as follows: First step where the string is taken around two roses placed one 180 degrees away from the other with the string at the bottom going around the stalks of the flowers. The second step is the two fingers rolling over the string to make the knot. The next stage, a loop being formed. In the next stage the loop formed is inserted on the top flower and then gently the fingers are released from the string so that the knot is placed over the rose. At last the strings being drawn to complete the knot. Again two more roses are taken, and the series is repeated. This is continued till we get a garland of required length. So we are using automatic flower knitting machine to tie the flowers.

## 2. GENERAL BLOCK DIAGRAM

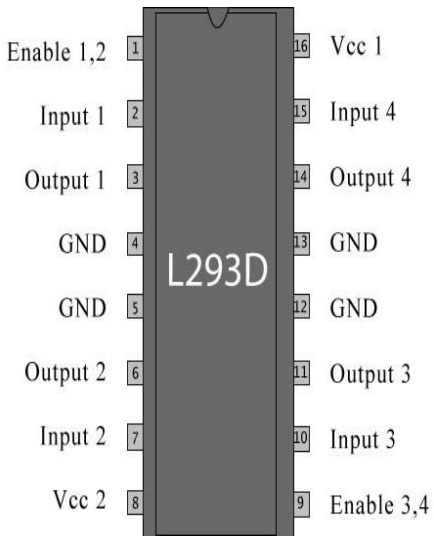



## 3. OVERALL BLOCK DIAGRAM




### *3.1 Conveyor Belt*

In our project we are using conveyor belt to carry the flower from one place to another. The belt is made up of fiber material and also the vibration will be less so the flower cannot lose its freshness. Two DC motor are used to rotate the belt.



L293D is a double H-bridge motor driver integrated circuit (IC). It act as current amplifiers since they take a less-current control signal and provide a high-current signal. This higher current signal is used to drive the motors.L293D contains two inherent H-bridge driver circuits. In its common mode of operation, two DC motors can be driven concurrently, both in frontward and reverse direction. The motor operations can be forbidden by input logic at pins 2 & 7 and 10 & 15. Input logic 00 or 11 will stop the equivalent motor. Logic 01 and 10 will rotate it in clockwise and anticlockwise directions, respectively.

Enable pins 1 and 9 (corresponding to the two motors) must be high for motors to initiate operating. When an allowable input is high, the related driver gets enabled. As a result, the outputs become dynamic and work in phase with their inputs. Correspondingly, when the allowable input is low, that driver is disabled, and their outputs are off and in the high-impedance state,

### *3.2 Robotic Hand*

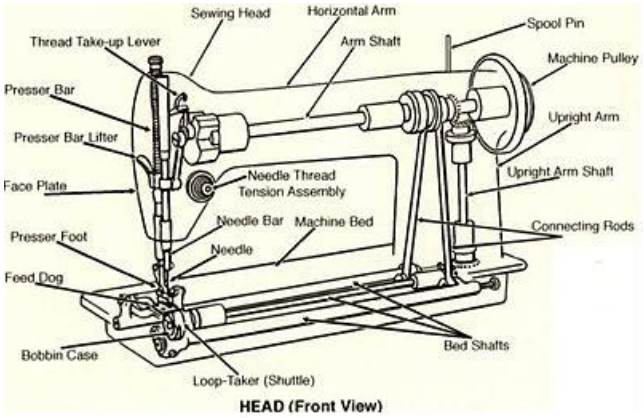
Present day industry is progressively more turning towards computer-based mechanization mainly due to the need for increased yield and delivery of end products with standardized quality. The rigidity and generally soaring cost of hard-automation systems, which have been used for computerized manufacturing tasks in the past, have led to a broad based significance in the use of robots capable of performing a variety of developed functions in a bendable environment and at lower costs. Robotics holds fabulous potential for benefiting every area of human life. Even though this benefit has been limited to much focused environments such as factories, capability has qualified to amalgamate robotic technologies into the human environment for daily use. However, this combination cannot be booming without accepting the interface between robots and humans. The use of built-up Robots characterizes some of up to date trends in computerization of the developed process. However, current day industrial robots also show signs of a colossal mechanical configuration and closed-system software construction. They are strong on simple rhythmic tasks, which tend not to require high accuracy.

Industrial Automation is distinct by the Automation group as "the foundation and purpose of technology to examine and organize the production and liberation of yield and services." Industrial automation has created many of today's scientific advances such as computers and cell phones. Automation allows the formation of complex applications to become an authenticity, thus emphasizing its significance.

Automation has also helped to diminishes waste, factory lead times, and fabrication costs. It has permitted manufacturers to generate a broader collection of products with the simplicity of being able to exchange from product A to B without having to recreate entire assembly lines. The pick and place robot is a microcontroller based mechatronic system that finds the object, picks that object from basis location and seats at preferred location. For finding of object, infrared sensors are used which sense occurrence of object as the transmitter to receiver path for infrared sensor is intermittent by placed object. Hence it picks the flower in the conveyor belt and placed it in the sewing machine.


### *3.3 Sewing Machine*

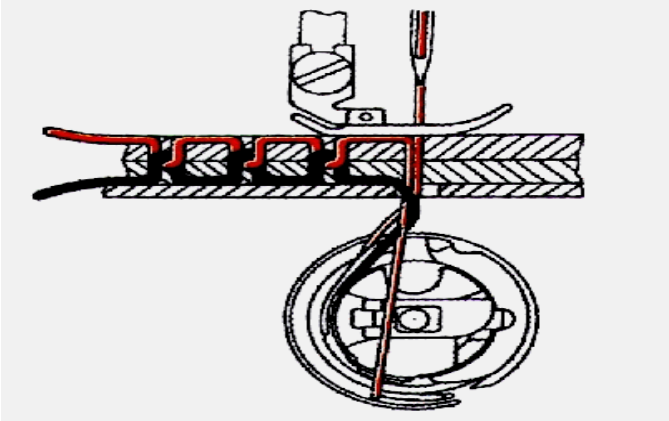
The needle descends to the bottom of its stroke, and concurrently the shuttle slides, vibrates, or oscillates as far as the end of its diffident movement. Enduring the movement of the balance wheel, the needle begins to ascend, and the shuttle instantaneously after begins to move forward. As the needle rises the material through which it is passing holds the needle flower long enough to cause it to loop out behind the eye of the needle under the needle-plate. The shuttle, still moving forward, enters this loop and passes through it, the necessary amount of flower being supplied either by the "time" of the needle-bar or by then check or take-up lever, according to the style of the machine. As the machine makes the loop then the robotic arm place the flower in the sewing machine and hence it tied.




## 4. WORKING

Initially the flowers are poured in to the vessel so that it can be slowly fall over the conveyor belt. In conveyor belt we are using two DC motor which can be controlled using a motor driver integrated circuit L293D,this IC will promotes the conveyor belt in both forward and reverse direction Input

logic 00 or 11 will stop the corresponding motor. Logic 01 and 10 will rotate it in clockwise and anticlockwise directions, respectively and also the conveyor belt stop for period in order to pick the flower using pick and place robotic arm and place in a desired position. IR sensor is used to sense the flower position and give a signal to the pick and place robotic arm so that it can change its position and pick the head of the flower. After the robotic arm picks the flower it is placed in the sewing machine. The needle descends to the bottom of its stroke, and simultaneously the shuttle slides, vibrates, or oscillates as far as the end of its backward movement. Then needle begins to rise, and the shuttle immediately after begins to move forward. It is long enough to cause it to loop while loop is formed then the robotic arm will place the flower in the loop and it is tied the speed of the sewing machine is also varied by using stepper motor control the diameter of the knot can also varied based on the thickness of the flower so any flower can be tied automatically without any manual input this process will continued finally the tied flower passes through the conveyor belt in order to obtain the fresh flower.



## 5. CONCULSION

In this technology world there is no time for any manual work it is filled with full of automation so we are designed an automatic flower tying machine. It is full of automation so it reduce the manual work not only that it also reduce the time consumption people can concentrate more on their work and work is done properly. Our ultimate aim is that we are tying natural flower so its freshness cannot be lost and finally it is achieved using the above technique.

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