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Seed Plowing Sowing and Weed Cutting Robot with Android Application

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Abstract: In India, near about 70% people are dependent upon agriculture. So the agricultural system in India should be advanced to reduce the efforts of farmers. Various number of operations are performed in the agriculture field like seed sowing, weeding, cutting, pesticide spraying etc. Very basic and significant operation is seed sowing. But the present methods of seed sowing are problematic. The equipments used for seed sowing are very difficult and inconvenient to handle. So there is a need to develop equipment which will reduce the efforts of farmers. This system introduces a control mechanism which aims to drop seeds at particular position with specified distance between two seeds and lines while sowing. The drawbacks of the existing sowing machine will be removed successfully in this automatic machine.

Keywords: Codeword Generation, Crosstalk, Encoding.

I. INTRODUCTION

Our entire economy depends on horticulture. Farming field includes the powerful generation of nourishment, encourage, fiber, and different products for people and creatures. Likewise farming incorporates operations like generation of cut blossoms, timber, manures, creature shrouds, calfskin, and modern chemicals. Substantial material dealing with is required in the cultivating operations. For instance, in vegetable editing, treatment of substantial vegetables in natural cultivating, treatment of overwhelming manure sacks. When contrasted with different fields, globalization and advancement in agribusiness field is less. Along these lines, it is important to make some headway in this field. Today's farming field requests to discover better approaches for rural operation to enhance execution effectiveness. In the field of farming different problems are faced by the farmers in the operations like seed sowing, pesticide spraying, weeding. Additionally the types of gear used to play out the operations are substantial. Because of relocation of people in the urban areas the work issue happens. These days apply autonomy innovation assumes a principal part in all areas like medicinal field, ventures and different associations. In different nations robots are utilized to perform distinctive operations in the farming field. We can make the utilization of accessible innovations and the apply autonomy innovation in the cultivating framework to decrease the endeavors of ranchers and furthermore to diminish time, vitality and required cost.

II. THEORY OF SEED SOWING

Furthermore with seed sowing, multipurpose operations, for example, Leveling and Plugging are likewise required. In any case, numerous issues are confronted by agriculturists amid seed sowing operation, as appropriate modification of separation between two yields, remove between two lines. Seed sowing is exceptionally fundamental and central operation in the agrarian field. These days seed sowing is done either physically or by tractors. Manual technique incorporates broadcasting the seeds by hand. Some of the time strategy for dibbling i.e. making openings and dropping seeds by hand is utilized. Likewise a couple of bullocks is utilized to convey the overwhelming gear of leveling and seed dropping. Another technique for seed sowing is to utilize tractor in ranches. The substantial types of gear of seed stockpiling and dropping component are appended to the tractor to drop the seeds. A ground wheel is joined at the base of the seed sowing machine. The power transmission framework is utilized to transmit the movement of the pivot to the metering component. The metering instrument contains number of scoops to drop out the seeds from the container. The seeds are then transmitted in the seed merchant funnels. Adaptable and good pipes can be utilized to disperse seeds.

Problems faced by the farmers during seed sowing:

- Low germination percentage leading to wastage of seeds.
- Creation of gap due to non-germination of seeds.
- Declination of total yield.
- Scarcity of labor, demanding high wages

III. BLOCK DIAGRAM & DESCRIPTION

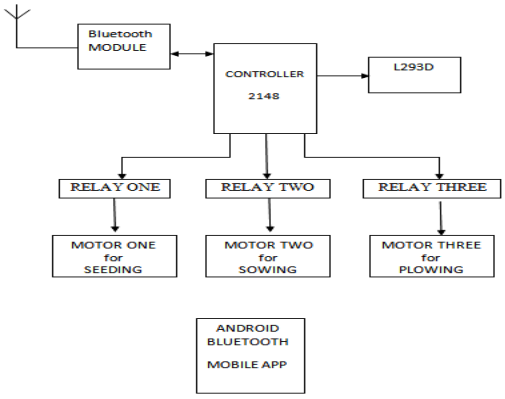

Fig.1. Electronic Assembly Design.

A. Electronic Assembly Design

The system includes two modules:

1. PC or Mobile
2. Robot Module

B. Robot Module

Bluetooth is utilized to get the flag shape the PC module and send the charges to the ARM. As indicated by the guidelines given by the client the robot move in forward, turn around, left and right course to drop the seeds at a specific position. Four wheels are associated at the base for the adaptable development of robot. Two DC engines are utilized to drive the wheels associated with the robot. L293D is utilized to drive the DC engines. Obstruction indicator sensor is utilized to distinguish diverse hindrance in the way of the robot. On the off chance that any snag is distinguished in the way of the robot the data of the obstruction is sent to the client through remote association amongst Bluetooth and PC.

C. Mechanical Assembly Design

It is the important part of the system. Main objective of the mechanical part is to design low cost seed storage and dropping mechanism which will drop the seed at a particular position.

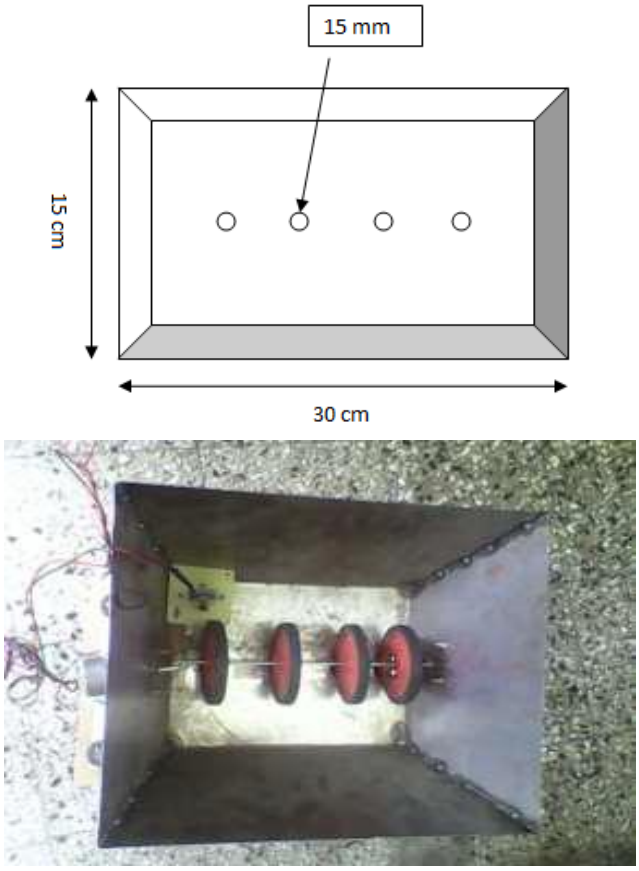

Fig.2. Mechanical Assembly Design.

For the mechanical gathering a plate sort structure is composed. Measurement for the plate structure is 30 × 15 cm. For seed dropping four gaps of 15 mm distance across are made. We can make the openings according to the necessity of the framework. Four wheels are continued the gaps to obstruct the seed with the goal that seed dropping should be possible at a predetermined time. A DC engine is associated with the wheel line to control the movement of the wheels according to the prerequisite. Four adaptable channels are associated with the wheels to drop the seeds at specific area. We can utilize extra pipes for extensive measure of seed sowing operation. Additionally we can make segment of the openings relying on the sorts of seeds. Hence we can likewise drop various types of seeds according to the necessity.

IV. RESULTS

Streak enchantment window based application is utilized to give directions for the development of the robot framework with the assistance of keyboard.1,2,3,4 and5 are the guidelines utilized for forward, turn around, left, right and stop development of the robot individually. 6,7 and 8 are the directions utilized for clockwise, anticlockwise and stop development of the engine joined to the top plate of mechanical get together structure.

Fig.3. Mechanical assembly of the project.

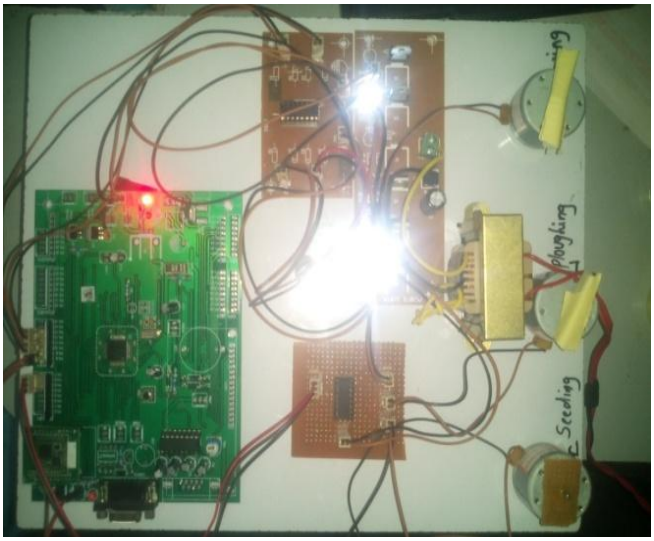

Fig.4. Proposed design of the project.

V. OTHER ALTERNATIVES FOR TECHNOLOGY

We can utilize camera for video connection which will identify the hindrances amid seed sowing. Shrewd robots can be utilized which will work consequently to sow the seeds without utilization of human association. We can utilize different detecting innovations to propel the procedure of seed sowing. Different input sensors, movement sensors can be included for the fantastic working of the robot.

VI. CONCLUSION

The framework is helpful to the agriculturists for the fundamental seed sowing operation. The method of operation of this machine is extremely straightforward even to the layman.. Low germination rate prompting wastage of seeds can be decreased by the utilization of this framework. Production of hole because of non germination of seeds can be stayed away from. Add up to yield rate can be expanded adequately. Work issue can be lessened. When contrasted with the manual and tractor based sowing time, vitality required for this robot machine is less. Likewise wastage of seed is less. So this framework will be a superior alternative for the ranchers who need to play out the seed sowing operation in an efficient way.

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