

AGRICULTURAL SPRAYER

¹B.VENKATESWARA RAO, ²MD.ASMA, ³K.RAJU, ⁴J.SIKANDAR, ⁵T.SAI KIRAN

¹Assistant Professor, ECE Department,CMR College of Engineering & Technology

²Assistant.Professor, CSE Department,CMR College of Engineering & Technology

³Assistant Professor, ECE Department,CMR College of Engineering & Technology

⁴⁻⁵B-TECH,Dept.of MECH, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

Abstract

A Sprayer is a device used to spray chemicals depending up on their needs and agricultural sprayers are used to spray pesticides, Herbicides and fertilizers for the crop. Most relevantly in Indian farming, people used to spray fertilizers with hand pumps by wearing it to their shoulders. Carrying sprayers with water in fields for long time is very hard. So, by this sprayer we can spray pesticides by walking in fields without carrying sprayer on their shoulders.

1. INTRODUCTION

As we know that farmers are facing problem while spraying pesticides or chemicals in the field by wearing sprayer to shoulders by these farmers have to face some health problem because farmers are using sprayer to spray pesticides in the field by wearing sprayer to shoulders by these farmers can affect by backbone problem and they can affect by some other health problems. As we all know that while spraying the fertilizers the chemicals will be spreading on our body, so that leads to so many sideeffects. so with this sprayer the chemicals will not spread on our body. The wheels will be in our control and as we push the sprayer forward the wheel will be rotate and the piston moves up and down. The pressure will be created in the

tank and it will be exerted when we press the handle the nozzles it leads to create the extra pressure to the sprayer and pesticide inside the sprayer comes out.

2. RELATED WORK

We normally spray pesticides in the field by wearing the agricultural sprayer to shoulders by these we get some health problems like shoulder pains and back bone problems and the farmers face some difficulty while spraying pesticides in the fields. On behalf of community visit, we have visited a village near to our college. There we have identified many problems like sanitation problems, mosquitoes, security problems, no proper streetlights, problem faced by the farmers while spraying pesticides in the fields., Out of all

these problems we have decided and chose to make a Agricultural sprayer.

3. IMPLEMENTATION

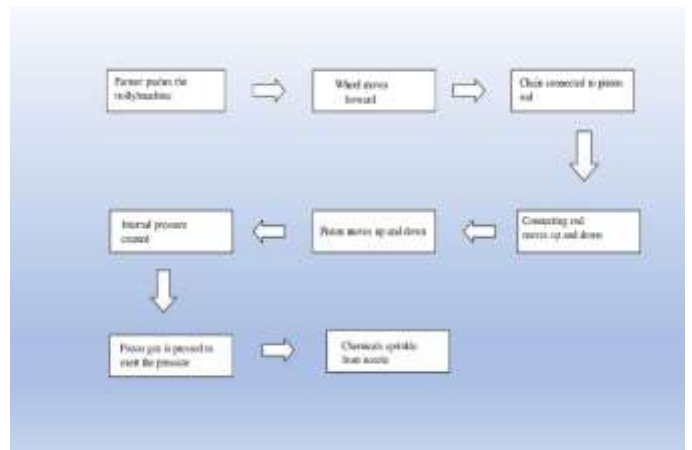
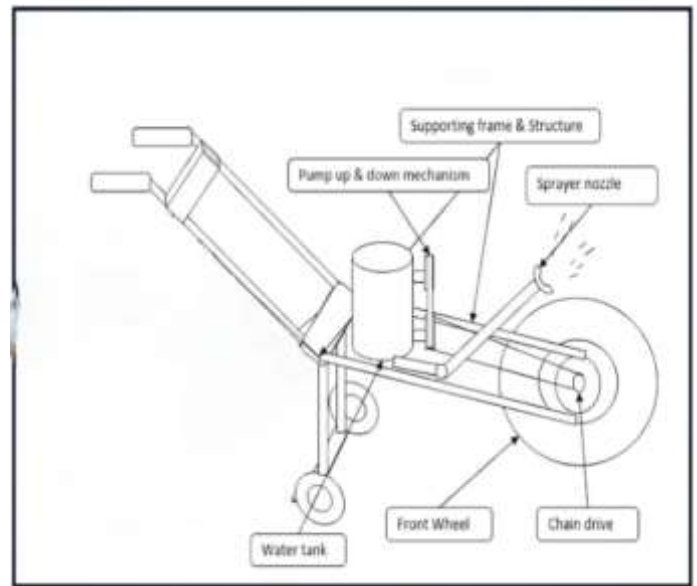
As I belongs to agriculture background, I know the difficulties about spraying pesticides and insecticides in the fields and the consequences after spraying the fertilizers so I want to implement a machine that sprays fertilizers and also control pest in the crop by this we can save time and work done by the farmers. within the less time we can spray large number of crops.

Objective:

- 1.The sprayer can move easily in the fields.
- 2.we can adjust the nozzle height according to the height of crops.
3. It should be easy to use.
- 4.The sprayer is able to carry 20 liters of water.

Our problem is to design a “AGRICULTURAL SPRAYER” which works with piston technology, when we push the sprayer forward direction the chain connected to the rare wheel. The connecting rod moves up and down which is connected to the piston. Here when the piston moves the internal pressure is created in the tank of the sprayer. When we press the nozzle gun the chemicals exerted with the help of nozzles. By this way the pesticides out from the sprayer.

Block Diagram



4. EXPERIMENTAL RESULTS

Our design includes very simple mechanism. The design of the prototype is as shown below in the figure



AGRICULTURAL SPRAYER

5. CONCLUSION

The Agricultural sprayer can be used for the following crops:

1. Cotton
2. Maize
3. jowar
5. Red gram

By using our agricultural sprayer, many of farmers can save time and the efforts that farmers generally face the problem while spraying pesticides in the fields. This will make farmers work easier and once bought will give better life. Here by we conclude that our agricultural sprayer is used for the farmers for easy spraying of pesticides in the field and they can reduce their effort for spraying pesticides in the field.

6. REFERENCE

MACHINE WORKING
THEORY: THEORY OF MACHINES

DIMENSIONS :MACHINEDRAWING

PARTS:1. https://www.google.com/search?q=sprayer+pump&rlz=1C1CHZN_enIN937IN937&oq=sprayer&aqs=chrome.2.69i57j0i433i512l2j0i512l7.14059j0j15&sourceid=chrome&ie=UTF-8&dlr=1&sei=zypVYcbQBdydseMPxcyX8AM

2. CHAIN SYSTEM:
https://www.google.com/search?q=chain+system+of+cycle&rlz=1C1CHZN_enIN937IN937&ei=PiXVYf6kGZWUseMP0MGvgAY&oq=chain+system+OF+CY&gs_lcp=Cgxn3Mtd2l6LXNlcnAQAARgAMggIIRAWEB0QHjIICCEQFhAdEB4yCAghEByQHRAeMggIIRAWEB0QHjIICCEQFhAdEB4yCAghEByQHRAeMggIIRAWEB0QHjIICCEQFhAdEB4yCAghEByQHR AeMggIIRAWEB0QHjoHCAAQRxCwAzoHCAAQsAMQZoFCAAQgAQ6CwguEIAEEMcBEK8BOgYIABAWEB46CAgAEBYQChAeSgQIQRgASgQIRhgAUPQGWLQaYMkoaAFwAngAgAGeAYgBkgWSAQMyLjSYAQCgAQHIAQrAAQE&scient=gws-wiz-serp

1. Swetha, M., Suneel Kumar, M., Muthubalaji, S., "Harmonic mitigation of PV based grid-connected hybrid system using ANFIS", International Journal of Innovative Technology and Exploring Engineering, 2019, Vol. 9- Issue 1, PP-2855-2860.
2. Usman, M., Ansari, M.D., Wajid, M., "On the Complementary Relationship between Sampling and Double Sideband-Suppressed Carrier modulation", Proceedings of IEEE International Conference on Signal Processing, Computing and Control, 2019, Vol., Issue, PP-380-382.
3. Sidhartha, P.N., Muthubalaji, S., Devadas, G., "Fuzzy pi controller based single phase hybrid inverter for domestic applications", International

- Journal of Engineering and Advanced Technology, 2019, Vol. 9-Issue 1, PP-37-42.
4. Varaprasad, B.J.S., Reddy, J.J., Rajesh, T., Kumar, Y.Y., Reddy, K.R.M., "Soil improvement by fine fraction residue from recycling construction and demolition waste", International Journal of Scientific and Technology Research, 2019, Vol. 8-Issue 10, PP-3389-3393.
 5. Adepur, A.K., Goskula, S., Chirra, S., Siliveri, S., Gujjula, S.R., Venkatathri, N., "Magnetically separable porous titanosilicate/Fe₃O₄ hybrid nanocomposites with enhanced photocatalytic performance under UV light irradiation", Journal of Porous Materials, 2019, Vol. 26-Issue 5, PP-1259-1267.
 6. Poongodai, A., Suhasini, R., "A command line tool for tracking error details of program using web scrapper", International Journal of Recent Technology and Engineering, 2019, Vol. 8-Issue 2 Special Issue 11, PP-2404-2407.
 7. Syed, A.T., Merugu, S., "Augmented reality on Sudoku puzzle using computer vision and deep learning", International Journal of Innovative Technology and Exploring Engineering, 2019, Vol. 8-Issue 11 Special issue 2, PP-140-145.
 8. Prasad, B., Marrapu, B.M., "Traffic impact analysis for proposed construction in Warangal city", International Journal of Recent Technology and Engineering, 2019, Vol. 8-Issue 3, PP-6952-6957.
 9. Malik, M.Z., Mukhopadhyay, S., Chatterjee, A., "Existence of an intervening metallic phase at the transition region of the charge-density-wave phase and the spin-density-wave phase in the 1-D Hubbard-Holstein model", AIP Conference Proceedings, 2019, Vol. 2142-Issue, PP.
 10. Ramakoteswara Rao, M., Soujanya, K., "Performance research of improved switched inductor quasi Z source fed PMSM drive", International Journal of Recent Technology and Engineering, 2019, Vol.8-Issue 2 Special Issue 8, PP-1075-1079.
 11. Shravani, J., Deva Dasu, G., "Power quality enhancement of three phase four wire UPQC in distribution system using neural network", International Journal of Recent Technology and Engineering, 2019, Vol. 8-Issue 2 Special Issue 8, PP-1124-1132.
 12. Soujanya, K., Upender, J., Srinivas, S., Vijaya Laxmi, J., "Hybrid fuzzy based MPPT techniques for maximum power extraction", International Journal of Recent Technology and Engineering, 2019, Vol. 8-Issue 2 Special Issue 8, PP-1140-1148.
 13. Jahnvi Reddy, V., Krushna Murthy, K., Bala Subramanyam, P.V., "Improved automatic generation control of interconnected power system", International Journal of Recent Technology and Engineering, 2019, Vol. 8-Issue 2 Special Issue 8, PP-1136-1139.
 14. Muthubalaji, S., Srinivasa Rao, G., Balasubramanyam, P., "Improving the performance of long distance tuned AC transmission systems", International Journal of Recent Technology and Engineering, 2019, Vol. 8-Issue 2 Special Issue 8, PP-1133-1135.