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Design Of The Manpower Mechanism For External Wall Related Work.

Fenil patel[1], Kailas sakpal[2]

[1] UG Student, Mechanical Department, Bhagwan Mahavir College of Engineering and Technology, Surat.
Email id: patelfenilkumar@gmail.com

[2] Asst. professor, Mechanical Department, Bhagwan Mahavir College of Engineering and Technology, Surat.
Email id: skailaskumar11@gmail.com

Abstract — Construction site is the one of the sectors where technology and advancement in technologies have not been utilized to the fullest potential. Be in procedure of the painting work of the external wall and also any types of the work related to the external side of wall. For example, the painting work of the external side of the building is done by the worker through the one rope and wooden sheet. It is very risky for workers and time consuming.

In this project our main purpose was a safety of the worker and work done in less time.in market many automatic machine are available for external side painting machine, but nobody can use. So I can design the mechanism who useful to worker for any types of work related to the external side of buildings. So our idea was to make manpower mechanism .whose can slide in horizontally and moving up and down in vertically. Our main concept is safety; therefore we can design one trolley for worker, whose seat in there and done the work related to external wall. Our mechanism is use in daily life and for future, because of government is keep going in infrastructure development. From this project, we hope to build and multiple use external wall machines.

Keywords- Blocks, Rope, Winch, Trolley, Pulley, Gears.

I. INTRODUCTION

In India, today very less technology is used in construction site. Mostly in painting work and other external side of the wall related work.as shown in fig1.0 that techniques is mostly use for painting everywhere in India. And this is my problem. In market many automatic machine are available for some work but nobody can use may be due trust or unemployment.as shown in fig 1.0 techniques use for painting is very risky for worker and very time consuming. It may be chance for any accidents.

FIGURE 1.0- (PROBLEM)

So, I design the mechanism for external side of the wall related work whose name is vertical and horizontal external wall working machine. This mechanism is use for any type of the work related to the external side of the wall.it is manpower mechanism. no external sources of power is to be needed.

II. OBJECTIVES

- Provided safety to worker while having work related to external side of the building when they have hanging within help of the rope in the air at the certain height from the ground.
- Very less time required for painting process of the external side of the work.
- Less no. Of workers are required.

III. 2-D MODELLING

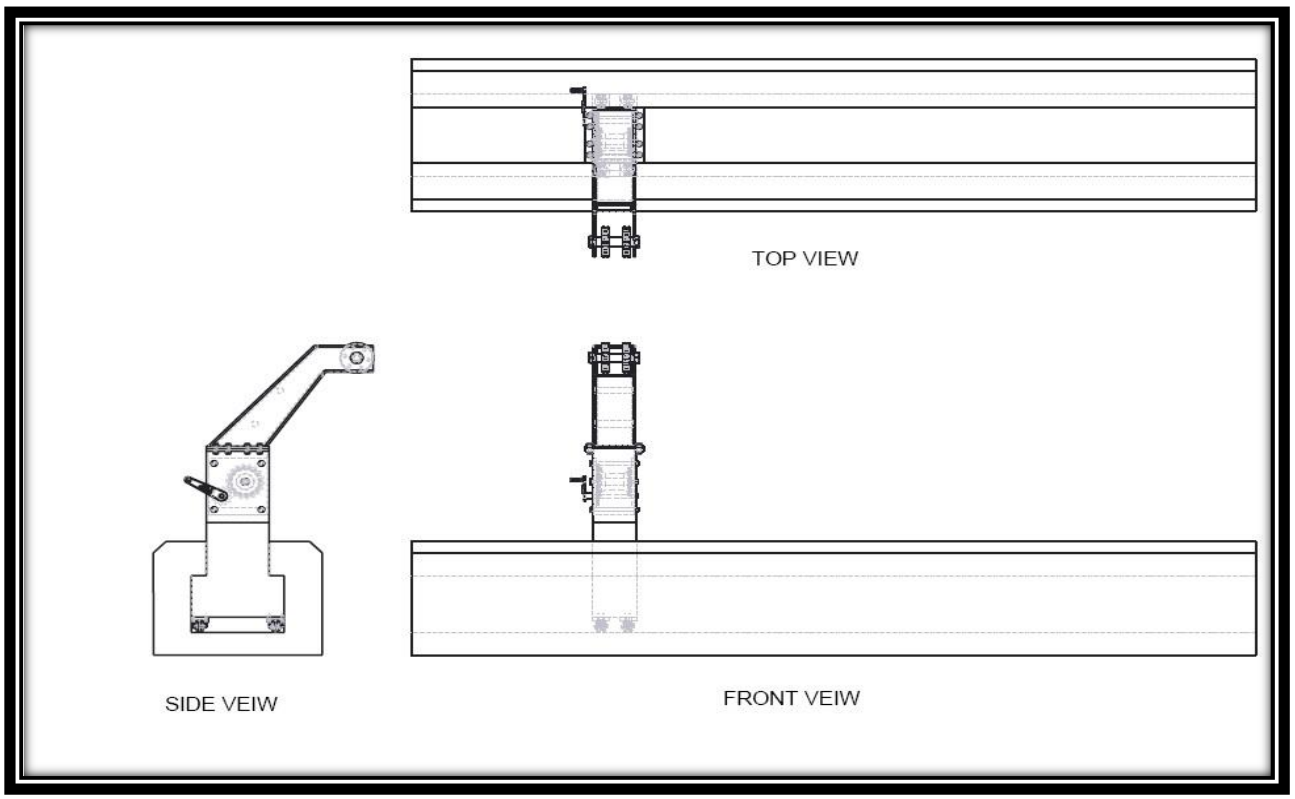


FIGURE 2.0 VARIOUS VIEWS OF THE MECHANISM

IV. 3-D MODELING

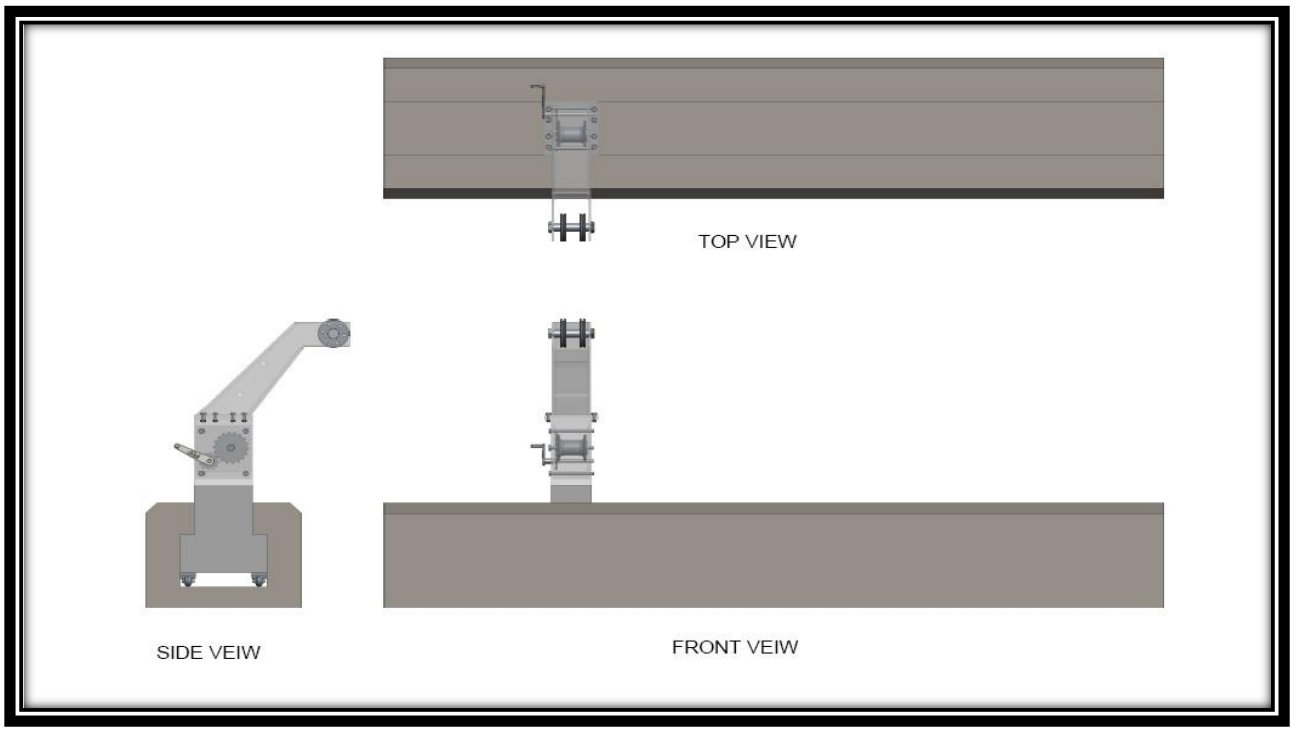


FIGURE 3.0 VARIOUS VEIWS

V. REALAISTIC MODEL

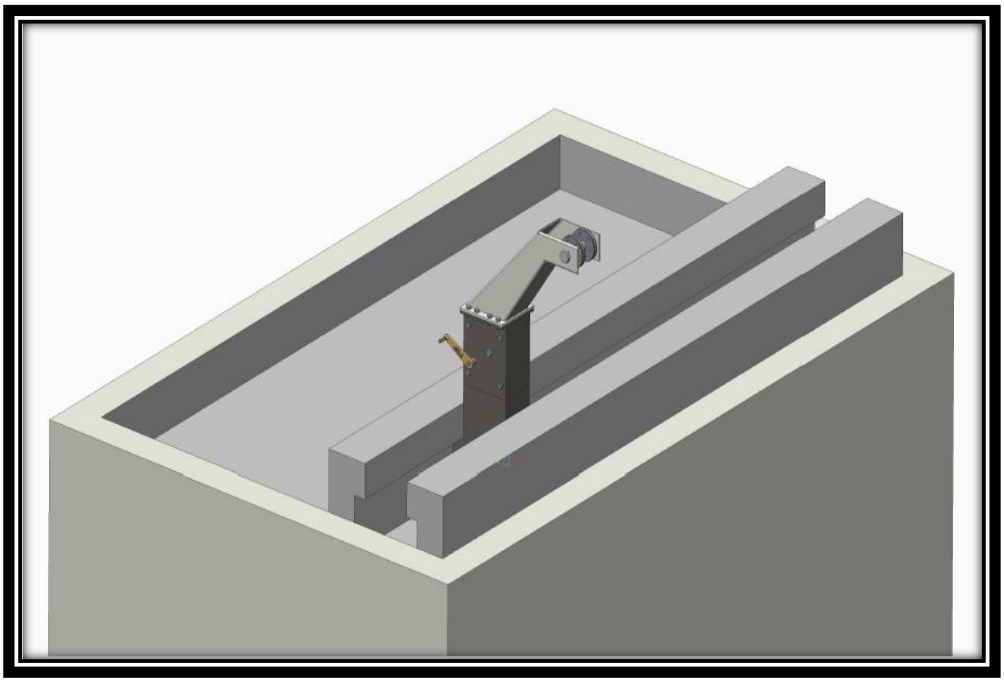
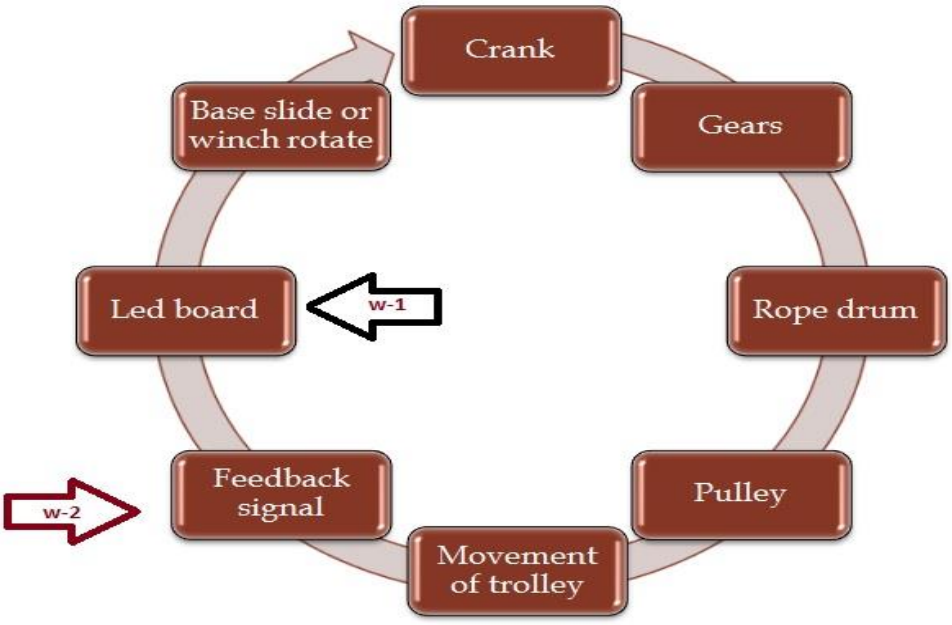


FIGURE 4.0 REALISTIC MODEL

VI. WORKING

My mechanism is consisting of mainly two parts, Blocks and manual crane type lever. First of all as per requirement blocks are assemble at top of the roof of building. Then insert manual crane into the blocks and locks the both end of the block within the plates. Here for running the mechanism two workers are is to be needed. One worker is doing the work which is hanging on the air within helped of the ropes. This worker is seated in trolley and trolley is hanging in the air within help of the ropes through pulley. Worker-2 is followed instruction given by worker-1.worker-2 is standing near the mechanism. That worker is to be control the mechanism as per instruction given by worker-1.working flow diagram as shown in below.



VII. ADVANTAGES & LIMITATION

- **ADVANTAGES**

- Very less time required
- Any type of external work can be easily done.
- Easy to operate
- Manpower machine
- Eco-friendly for environment

- **LIMITATION**

- It is use for only Indian building design.(top of roof of building should be flat surface)
- load capacity limited is depend upon the other components

VIII. CONCLUSION

By developing this mechanisms design we can try to reduce time required to complete the external wall related work like, painting, washing (in case of glass building), plastering, etc. Also it is helpful for weight lifting from one floor to another floor. Here we can also design the trolley for safety of workers as shown in fig above. Our main purpose is satisfied here is reduced time, increase safety. Our design is also consider unemployment.

IX. REFERNECES

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