Smart Painting Machine

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Abstract- *The innovative design of painting machine is mainly concerned the large as well as small walls and roof top.The design is to reduce the human effort and time taken for completing the process is reduced.The wheels are provided for transportation purpose.The motor,pump,tank and air compressor is provided for increasing the effectiveness of the design.The supply of air and compressed air power is controllable for the design.The vertical adjustment is done on the sliding path of the shaft.The nozzles are placed in the connection of the tube above the sliding path shaft.The design is very helpful for painting the walls as well as roof top.The effective features are included in various size of walls.The number of nozzles and distance also adjustable.The top of sliding path is used to spray the paint in top roof.The control valve is provided for individual nozzles.The vertical adjustment is done on the rope drive through lifting purpose.The separate paint and compressed air is mixed before the nozzle and after control valve.*

Keywords- vertical adjustment, side wall, roof top, sliding path, nozzles, compressed tube.

I. INTRODUCTION

In our life we are using many machines for human comfortable zone.The machines are to reduce the effort of human being and minimize the time taken.In similar way painting is most important to house,machines and vehicles.Because the paint is corrosion resistance.The paints increase the life time of the product and protect the various atmospheric condition such as rain,wind and sunlight.The corrosion is mainly depend on water and sunlight. The welded joints are also protected by painting.The selection of paint is most important.According to the level of corrosion is depends on quality of selection of paint also increased.The corrosion is mainly avoided by using paints in various places,say for example white color is to protect the houses from sunlight and black color is protect the ships from seawater.In the same methodology is used in depending upon our application and size of the component.In most of the metals and machines are pained by using single nozzle operated sprayers.In the single nozzle is enough to supply the sufficient paint for machines.Because intermediate components are disturbed the painting sprayer.After the certain year paints are automatically removed by the natural conditions.In every house and pained by the protection and cooing purposes.So the time taken for the house painting is take very large time.The design of painting is also increase the time taken.

II. PRESENT PROBLEMS

Painting is important to various places.But there is no special kind of painting machines are available.So the time taken for the painting process is increased and more effort is required for painting purpose.Hand pain also occur in the working time.The walls are huge size in schools,hospitals and apartments.There is no possibility for completing the work with in the time and number of painters are required for minimize the time taken.In ancient days painters are used in brush and bucket of paint.In one hand is take paint bucket and other hand is painting by using brush.So the problems can be reduced that can be reduced that some innovators are introduced the spray painting machines.The machines are consist of small size paint tank,pressure handle and nozzle.In most of the spray painting machines are also take more time for complete the job.But now a days air compressors are used in single nozzle spraying process and it is more man power is required.In top roof is very complicated to spray the paint.Because there is a separate person is required for hold the chair or table.There is artificial steps are available.But it is not suitable for inside the room.The height will affect the processing time and harmful to the painters.In the height affect the uniform spray in all the places.So it can be concerned that in roadways a singe brush advanced painting machine is reduce the painting time of the crossing line and directional lines.The single brush is enough to roadway painting but in walls are not enough to single brush or nozzle.The single nozzle spray painting is only suitable for cars,bikes and chairs.But the large surface wall is not completed by the single nozzles with In the time.

Figure 1. Man powered painting

III. OBJECTIVE

To prepare a machine for minimum cost with high efficiency and to reduce the time taken for the job.The preparing is to spray the uniform distribution of the paint through the nozzle.To reduce the human effort of the working time and height fear is completely removing by the machine.To reduce the painting cost of the owners and increase the perfection of the distribution.

III. DESIGN

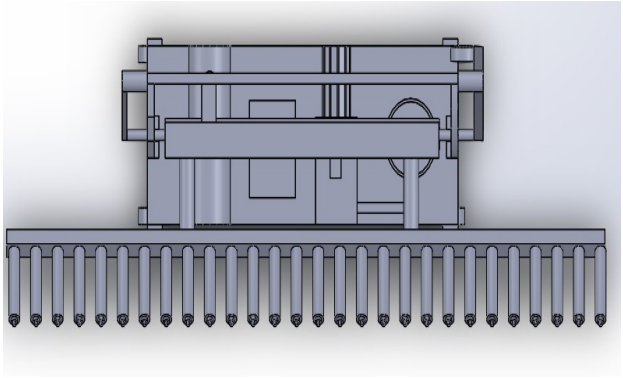

Figure 2. top view

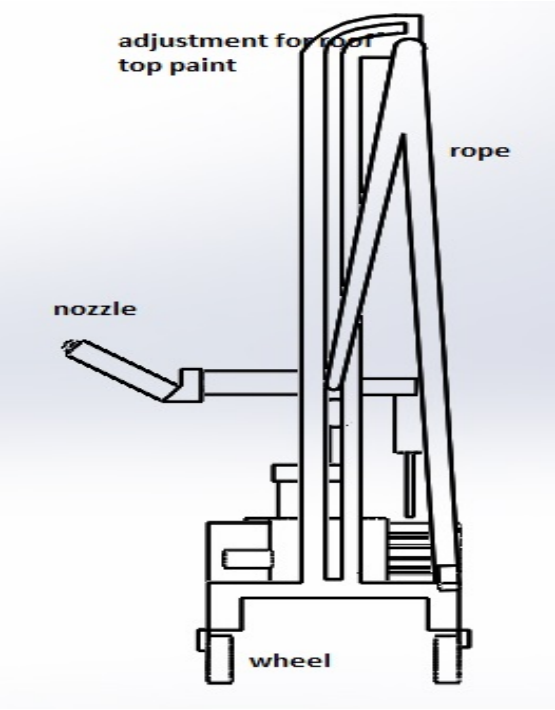

Figure 3. side view

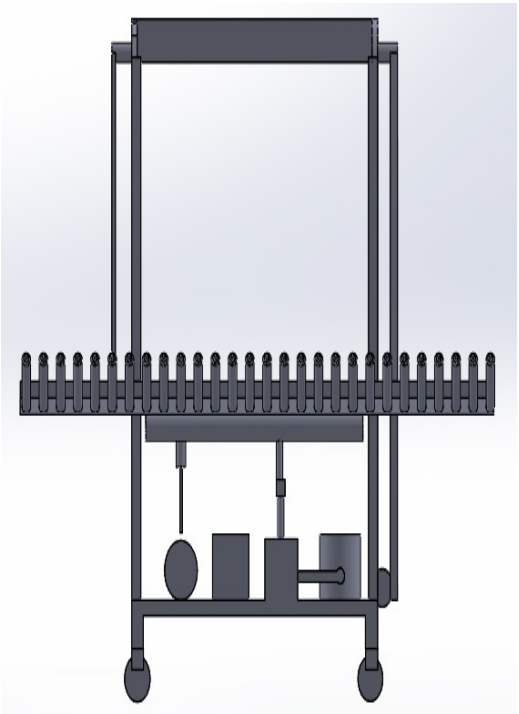

Figure 4. front view

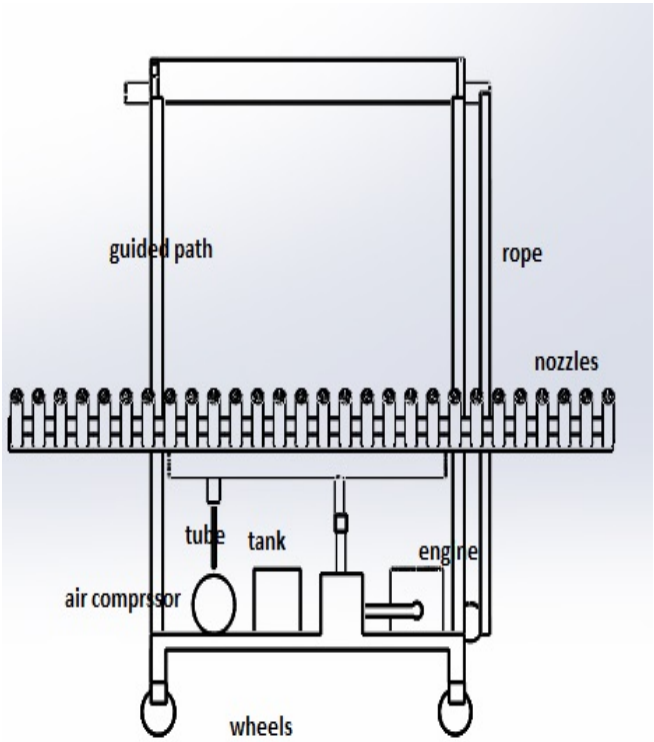

Figure 5. front view

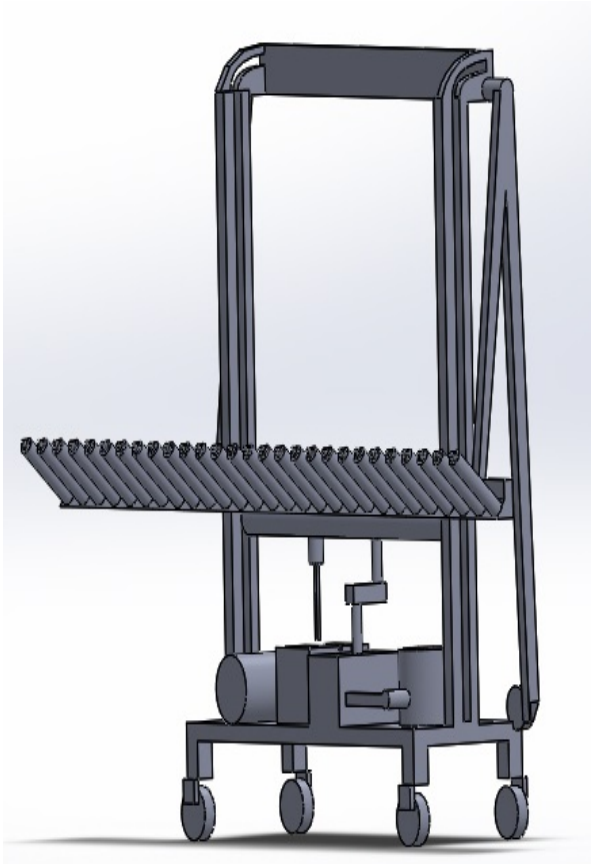

Figure 6. isometric view

V. WORKING

The previous problems are concerned that in our design of painting machine is very suitable for long as well as short height surface walls.The machine completes the job with in the specified time .The advanced features are included in the painting machine.The power supply is only done on the electric current.The fuel is supply the sufficient power for all the time,But the emission of carbon dioxide,sulphur dioxide and hydrocarbons are affect the environment through the exhaust of an engine.So we are using electric current of whole operation.In the electric energy can be save through in various processes.The number of nozzles are to complete the operation in quick time.The bottom of the above wheel surface has the paint tank,pump,compressor and electric motor is attached.The collection of mixed composition of the paint is stored in a tank.The pump is used to supply the paint for spraying purposes.The electric motor is provided for supply the power in both pump and compressor.The compressed air from the compressor is supplied on above the tube.The pump supplies the paint and compressed air is mixed in before the nozzle.So the high pressure of paint is sprayed through the nozzle.The vertical height is adjusted in our design.The intermediate side wheels are attached with the vertical shaft.The paint and compressed air is mixed in a rectangular tube.The above place of rectangular tube a rope is attached .In top of the column has the two rollers are provided for vertical adjustment.The vertical adjustment is done on the man power as well as motor operated due to depending upon our requirement.The bottom of the four wheels are provided for the transporting purpose.The roof top also pained by using the top of the curved path.The nozzles are inclined to some angle of inclined position.The nozzle distance also adjustable for our requirement.The control valve is provide for stop the spray of nozzle under certain condition,such as pillar,plug points and fans.The before nozzle connecting tube distance also adjustable for pillar and rack positions.In the spray we can control the side walls as well as top roof.The movement of whole design is done on the wheels.A side rotary handle is provided for vertical adjustment through the path way.The top sliding way has the guided path is used to spray the paint in roof top.The compressed air is also controllable depending upon number of nozzles opened.The movements are easily done through guided path.The horizontal motion of the design is done to spray the paint in top roof.

VI. CONCLUSION

The painting machine will reduce the time taken for painting and minimize the effort of the human being.The adjustable salient features are very helpful to reduce the injuries of working time.The design is to completely remove

the brush painting in most of the places except design painting.The portable design of painting machine has nozzles to reduce the extension time of painting process.The low cost machine is effectively used for painting purpose.The perfect distribution of paint is possible for in our design.The design is to protect the life of painters.In the machine is mainly used in schools,colleges and hospital walls and top roof painting.The machine saves the time of workers.

REFERENCES

[1] www.wikipedia.com

[2] A reference paper on "AUTOMATIC WALL PAINTING ROBOT"by P.Keerthanaa, K.Jeevitha , V.Navina , G.Indira, S.Jayamani.

[3] A reference paper on"Computer Vision Controlled Automated Paint Sprayer Using Image Processing And Embedded System"by M. Joseph Kohilan,Mrs. G. Thenmozhi.

[4] A reference paper on"DESIGN & FABRICATION OF REMOTE OPERATED 3-AXIS SPRAY PAINTING MACHINE" by Prof. Dinesh B. Shinde , Sanket D. Ingole , Rohit P. Gomase.

[5] A reference paper on"Automatic Wall Painting Using Lead Screws"by Andhale Satish , Ansari Md. Aiman , Ashtekar Keshav , Asnewar Swapnil , Prof. Sonawane D.P. , Prof. Bhane A.B.