Case study of Galvanized tank protector insulator at KEC International, Butibori Nagpur

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***Abstract* - The invention relates to a holding device which has to keep in a vertical position insulating materials such as, for example, rock wool mats or expanded polystyrene mats which are customarily used in the building sector.**

INTRODUCTION

- In this project, insulating shield used to cover galvanized zinc tank or any galvanization tank.
- Which reducing the working of heat inside the tank.
- Also with this insulating shield, galvanized fumes can also reduce which affects human body system.
- With this project, we can also support to environment and control.
- The amount of fuel required to the maintain the molten zinc form into the tank, Due to which excessive fuel can be saved by this system.

PROCEDURE FOR PAPER SUBMISSION

A. Review Stage

- Most of the industries, specially galvanized industry continuously used burner in the galvanized tank for maintaining the molten zinc form.
- Many of the research are done by most of the institute line university by Cambridge, massa chustls Institute by technology and Princeton university are continuously doing practical experiment for solving this problem.
- Specially fumes problem, most of the country did not allow the galvanized industries due to this environment problem.
- By reducing the waste of the heat we can reduced the consumption of fuel required to the burner.

PROBLEM IDENTIFICATION

- The main problem in open galvanized that is, it continuously limit zinc gums into the environment by the industries as well outside.
- And also have lots of heat quantity which is produced by burner by continuously burning by fuel to required melting state of zinc into the tank.
- Loss of fuel is more the process.
- The worker is working near the galvanized tank has more effect by zinc gums.
- And also caused eyes burns, skin damage and respiratory problem.
- As some times, weather effect causes in the zinc tank or dusty practical in the industrial areas also effect the galvanized tank surface area.
- Where a layer of impurities and dust practical are collected on the surface and a thin firm is produced on it which effect the galvanized process.

Figures and Tables

- Most by the industries, especially galvanized industry continuously burner used in the galvanized tank for maintaining the liquid zinc form.
- Many of research are done by most by institute Line University by Cambridge,

Name of Research Paper	Name of Author	Conclusion
Insulation Equipment of reducing heat wastages.	Harry Pothmas	➢ That can reduced the heat flow waste. ➢ Heat proof twice within the tank. ➢ Reduced the waste of burner.
Heat treatment flew process	Vindeat Gago	➢ This may carry forward the system. ➢ Easily flow system. ➢ Suck more heat quantity.
Automatic detecting protecting system	William George	➢ Can move without any mistake or input. ➢ No need of man. ➢ Fully automatic process flow system.
Hazardous detecting system	Vinzin tachy	➢ Doesn't emission tonic gas into the plant. ➢ Hazardous places get under improvement. ➢ Human respiration gets reduced.
Excessive waste collection	Harry Techtuse In Aug. 2016	➢ Low excision waste collected. ➢ Improving the law layer of dirt firm making process.
Fuel forward system	Van-Van Titkey	➢ Easy to move mechanism. ➢ Fuel-forward process is quickly responsive. ➢ There is motor attached to the system.
Human body effect due to zincs fumes.	Ross. G. Coopu	➢ Respiration effect get reduced. ➢ Eyes burning problem gets solved due to high present of zinc fumes into the industrial environment. ➢ Skin damaged gets reduced.
Gear drive arrangement for fuel-forward the whole system	Steve Heudelt	➢ Quick operation system. ➢ Easy to flow process system. ➢ Maintains free system. ➢ Low lubrication required to run the system.

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CONSTRUCTION

- As we have ready all the components to assemble the project where we have this component such as.
- Where first we take the fabrication body where sliding track assemble on it.
- We takes the insulating cover on which we are fixing the insulating material like asbestos.{insulating material}
- For this moment of insulating cover on sliding track.
- we are using the DC motor for moment which is attached to the gear drive system.
- Now we can connect the roller to the gear drive system with the help of shaft and Bering so we can move the insulating cover on sliding track within perfect alignment.
- Now with the help of electrical wiring circuit to the controller and connected all this electrical wiring supply to the DC motor.

WORKING PRINCIPLE

- As we construct all the component regarding this project where we can be able to run the project on easy and systematic manner.
- When we press the forward button attached to the controller both the DC motors are getting operated.
- Where both the motors give rotating motion to the roller with the help of gear drive system.
- Now the insulating cover are moving forward to cover the galvanized zinc tank.
- As the roller rotates on the sliding track it forwarded to the insulating tank to the galvanized zinc tank.
- Now the galvanized tank is getting protected heat insulated and making working environment safe and secure.
- When we required to galvanized the material or galvanization process then we operate the reverse button attached to the controller with the help of dc motors.
- Where both the dc motors give rotating motion to the roller with the help of gear drive system.
- Now the insulating cover moves in backward direction to get the starting position of the insulating cover.
- As the roller rotates on the sliding track in reverse direction to getting to the starting position.
- Now the insulating cover are get to the return position and now we can continue our galvanization operation or process continue.

APPLICATION

In general, ball bearings are used in most applications that involve moving parts. Some of these applications have specific features and requirements:

- Computer fan and spinning device bearings used to be highly spherical and were said to be the best spherical manufactured shapes, but this is no longer true for hard disk drive, and more and more are being replaced with fluid bearings.
- In horology, the company Jean Lassalle designed a watch movement that used ball bearings to reduce the thickness of the movement. Using 0.20 mm balls, the Caliber 1200 was only 1.2 mm thick, which still is the thinnest mechanical watch movement.
- Aerospace bearings are used in many applications on commercial, private and military aircraft including pulleys, gearboxes and jet engine shafts. Materials include M50 tool steel (AMS6491), Carbon chrome steel (AMS6444), the corrosion resistant AMS5930, 440C stainless steel, silicon nitride (ceramic) and titanium carbide-coated 440C.
- A skateboard wheel contains two bearings, which are subject to both axial and radial time-varying loads. Most commonly bearing 608-2Z is used (a deep groove ball bearing from series 60 with 8 mm bore diameter)
- Yo-Yos, there are ball bearings in the center of many new, ranging from beginner to professional or competition grade, Yo-Yos.
- Many fidget spinner toys use multiple ball bearings to add weight, and to allow the toy to spin.
- In centrifugal pumps
- Railroad locomotive axle journals. Side rod action of newest high speed steam locomotives before railroads were converted to diesel engines.

ADVANTAGES

- It is easy to operate.
- It is reliable and durable.
- Its structure is simple.
- It is less costly.
- It is human hazarders.

DISADVANTAGES

- If the motor is break the production will stop.
- If the electricity will not there then the production will stop.

CONCLUSION

- This project help to reduced environmental and human effect.
- Makes working area as per flavour by reducing the heat comes from, that galvanized tank.
- Reduced the excessive dusty coating firm which reduced the quality of coating material.
- Reduced the fumes effect on human, environment and machine components.

REFERENCES

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Books

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[6] George R Roemer6 Claims.(C. 91-21) This invention has reference to a method of and apparatus for the continuous cleaning and coating of preferably wire fabrics. US Patent 1,935,995, 1933