DESIGN AND FABRICATION OF OVERHEAD TRAVELLING CARGO HANDLING MACHINE FOR WAREHOUSE

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ABSTRACT

Warehouses are large plain and commercial buildings used for storage of goods by manufacturers, importers, exporters, wholesalers, transport businesses, customs department. Earlier days unloading, stacking and loading operations were being done manually, which requires a huge number of porters to handle the material. For the last few decades, people are using fork lifts, conveyors and Hook Cranes to perform the unloading, stacking and loading operations. Conventionally, these forklifts are powered by I. C. Engines which emit exhaust gases inside the warehouses. So, in order to overcome such drawbacks, D. C. motor driven forklifts were developed. But they cannot be used for heavy loads. They also require large turning radius / moving space. The technical solution that is deemed feasible and capable of addressing the above mentioned issues is an electrically operated overhead travelling cargo handling machine which reduces the turning radius and increases the storage area. In this overhead travelling forklift, we have a column to which the fork is attached. This column can move along the long travel and cross travel with ease. In this we use a bevel gear which helps us in slewing of fork. The forklift with the help of AC motor instead of DC motors and I. C engines, which require refueling or recharging time. As a part of our project dissertation, we are making “Overhead travelling cargo handling machine for warehouses” which might be helpful in the reduction of exhaust emissions from forklift exhaust in warehouse as it operates with electric energy. The main objective of this project work is to study the physical properties, optimum parameters of the process and the working rate of existing techniques of material handling (Cargo handling) and develop a design approach to provide a better working environment to the workers working in warehouses and subsequently increase the storage space.

KEYWORDS: I. C Engines, Warehouses, Cargo, Material Handling, Design Approach & Material

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