Power Generation through Gravity and Kinetic Energy

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Abstract— In the new design is used for converting unutilized mechanical energy into electrical energy and it is compactly system. This new design is specific to the regenerate the electrical energy from mechanical energy of the lift which is stored in battery and it will use whenever the light is off, this design is easily compile with the existing system. This design content two rolling part and a reciprocating part which is used to convert circular motion into reciprocating motion and vice versa. When lift is in motion, the mechanical energy converts that's specific system into electrical energy.

Key words: Electrical Energy, Lift, Mechanical Energy

I. INTRODUCTION

An elevator system, elevator providing a self generating power source. The system converts kinetic energy of an elevator cab movement into electrical energy used for lighting system. The elevator system can be structured in numerous ways a motor in generator mode, driven by a system to the elevator cab. The present invention relates to a self-powered for elevator systems. More particularly, the present invention pertains to the use of the kinetic energy of an elevator cab movement to generate electrical energy to regulate the speed level. The industrial revolution brought with it a number of technological advancements. Machine power allowed for fast developments and safety systems were introduced. In 1880, the first electric motor was used to power a lift. To covert power for needs in the industry, with the necessity of moving great amounts of raw materials, and the introduction of steel beam construction and increasingly taller buildings, lift technology evolved rapidly. Energy efficiency has not been a major market and technological driver in this sector. Other design options like space restrictions, reliability and safety, riding comfort, etc. have been the central concerns of the vast majority of manufacturers. The last few years have witnessed a change of course with companies introducing energy efficient technologies for competitive reasons and, at the same time, to help their customers save energy and money. A technological assessment was carried out aiming at the characterization of the existing technologies and mainly, at emerging energy efficient solutions which can provide savings energy consumption. Technological solutions at component level are evaluated and information was used to provide a credible base line for the evaluation of potential energy savings in combination with the results from the market survey and the monitoring campaign. Elevator systems and controls for such systems are known in the art. Such systems and controls use a wide variety of designs to achieve numerous objectives, and the basic principle of balancing an elevator cab against assembly driven by a motor. For years, building designers and code authorities have recognized the necessity of emergency power in buildings to ensure that elevator cabs. Moreover, most elevator systems currently require building power distribution systems to provide transfer switches and emergency feeders for elevators and main distribution emergency switchboards and emergency generators sufficiently large to cover elevator loads, all of which result in additional costs and inefficiencies. Thus, it would be advantageous to have an elevator system that during a power outage or any other occasion when needed accomplishes the controlled descent of the elevator cab without a battery or fossil fuel based generator to drive the elevator motor, but rather accomplishes the initial descent of the elevator cab due to gravitational forces and the heaviness of the elevator cab relative to an attached counterweight, and which then converts kinetic energy of the movement elevator cab into electrical energy used for the lighting system. All lifts shall be robust, reliable and shall meet the department users requirements and expectations. lift installation must comply with all current regulations, including Building Regulations. The existing installations do not comply with these standards they shall be brought up to date as far as is reasonably practicable. Any remaining sections of the existing installations that do not comply with this specification shall be highlighted and drawn to the attention. In the existing system the new design is used for converting unutilized mechanical energy into electrical energy and it is compactly fitted into headroom. This new design is specific to the regenerate the electrical energy from mechanical energy of the lift which is stored in battery and it will use whenever the light is off This design is easily compile with the existing system this design content two rolling part and a reciprocating part which is used to convert circular motion into reciprocating motion and vice versa. The lift is moving up and down that's the mechanical energy converts that's specific system into electrical energy.

II. LITERATURE REVIEW

The literature survey has been pioneered effort in this system. Various machine design concepts, mechanics, material behavioral properties and CAD/CAE concepts form literatures help to establish comparative study between existing and new experimentation. The terminologies referred from literatures for designing are discussed as follows. The machine room less lift is to utilize permanent magnet, synchronous gearless drive technology powered by a variable frequency inverter unit matched to the machine to deliver and control the necessary torque throughout the full speed range of the machine provided. All drive equipment is to be attach in the lift shaft without the need for separate plant rooms. Where the control panel is required to be mounted outside of the lift shaft. Lift or elevator is transport devices that are used to move goods or peoples vertically. In this project, the Motorola MC68CH11 A1 microcontroller based lift control system is constructed to simulate as an actual lift in the real life. This project dissertation documents the findings and results of a research on a microcontroller based lift control system. It provides useful information to those who wish to carry out a lift control system research by

transferring mechanical energy into electricity when the motor is rotating without power therefore the motor is capable of producing electrical energy back into the grid system. This situation is call "Regenerative mode" which is the wasted energy can be used once again. This investigated ERU and inverter in this study can be applied for future use of in existing elevator system. The Proposed ERU is used to convert DC voltage to AC voltage for gird synchronization. The investigated ERU is operating as three-phase module. It is observed that when the motor operates as a generator then ERU will receive DC voltage from the elevator inverter system then convert to AC voltage that can be fed into the grid system. Systems and controls use a wide variety of designs to achieve numerous objectives, and the basic principle of balancing an elevator cab against assembly driven by a motor. Building designers authorities have recognized the necessity of emergency power in buildings to ensure that elevator cabs. Moreover, most elevator systems currently require building power distribution systems to provide transfer switches and emergency feeders for elevators and main distribution emergency switchboards and emergency generators sufficiently large to cover elevator loads, all of which result in additional costs and inefficiencies. Thus, it would be advantageous to have an elevator system that during a power generation electrical energy used to for lighting system.

III. Research Methodology

An analysis based on existing literature as well as a study including interviews and group discussions with relevant stakeholders were made aiming at the identification of influential barriers to energy efficiency in the Asian lift and escalator market. Strategies and measures are outlined to overcome the barriers identified. An overview of technological and organizational features that increase energy efficiency in new and retrofitted lift and escalator installations is made, providing guidelines to help various stakeholders directly or indirectly concerned with lifts and escalators reflect and decide on measures to increase energy efficiency for existing and new installations.. The invention and the preferred modes of use will best be understood by reference to the following detailed description of an illustrative embodiment. A control block diagram of a self generating elevator emergency power source for an elevator system using a reciprocating and an electrical generator. A control block diagram of self generating elevator emergency power source for an elevator system using a reciprocating and an elevator motor in generator mode.

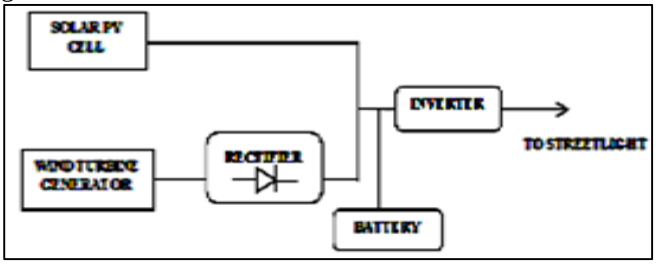

Fig. 1: Conversion Circuit

IV. Conclusion

The dominant environmental burdens of a lift system are due to the energy it consumes in lighting system in a building. Lifts are major energy users in buildings. Buildings are responsible for a third of the energy consumed. By mathematically modeling a static converter drive, can calculate the energy consumption of a lift trip for any input parameters. This provides the basis for the design of lift convert into electrical energy. New technique it has advantage that it does not utilize any external source. Now the time has come to put forward these types of innovative ideas, and researches should be done to upgrade their implication.

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