

DESIGN & ANALYSIS OF AN EMERGENCY HAND PHONE CHARGER

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ABSTRACT

The emergency hand phone charger will charge hand phone immediately; it provides more comfort for the people in terms of traveling. The basic driver of this emergency hand phone charger is a dynamo. The chosen dynamo produces DC voltage.

In this project, 3 alkaline 1.5V battery were chosen as the voltage source in operating the dynamo in order to charge hand phone, the operate hours will be more than 6 hours. Another part is produced voltage by hand cranking.

The mechanism of this design can be summarized as below: a spur gear system is attached to the dynamo. The spur gear system is designed to step up the rotation speed from a very low rotation speed to a high rotation speed. The ratio of the spur gears used in the project is 2:1. Through the spur gear system, the rotation speed will be stepped up double. The spur gear system is connected by a shaft. When the dynamo is being supplied by the worm gear fine-tuning the speed and the gear will translate the rotation motion into the dynamo produce power through the hand phone charger circuit.

The scope of this project can be categorized as the design of mainframe, analysis of turning speed, design of hand phone charger circuit, selection of dynamo & spur gear, the selection of proper materials for the mainframe and the method for prevent corrosion