

FABRICATION OF ELECTRO MAGNETIC ENGINE

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Abstract: The magnetic engine is according to the concept appears to be also-called "perpetual motion machine". Here you will find its images, patent, and also you will learn information from his production and testing. The Black pointer on the disk indicates the position of piston. It is evident that with the closed shutter the piston is located stably in the upper position, and shutter renders the valuable screening of magnets, fulfilling the functions described by me. Further, with the discovery of shutter piston accomplishes reciprocating motion. The stored energy off wheel continues to move piston to the upper position.

Keywords: IC engine, electric vehicle, electromagnetic, 4stroke, zero fuel.

I. INTRODUCTION

Magnetic engine, in housing of which are placed the permanent magnets, the first of which is established with the guarantee of a possibility of the accomplishment of reciprocating motion under the action of the forces of magnetic field, in the housing is also established the shaft, connected with the first magnet with the aid of the means, which makes it possible to convert the reciprocating motion of the first magnet into the rotation of shaft, that is characterized by the fact that the second magnet is securely fastened on the housing opposition first, both magnets are oriented by poles counter, magnetic engine is supplied with the ferromagnetic screen, made with the guarantee of a possibility of its displacement in the clearance between the magnets perpendicular to the line of forces of magnetic field, ferromagnetic screen is supplied with the means, which ensures its displacement under the action of the rotation of shaft, ferromagnetic screen is also supplied with the means, which ensures its recurrent displacement.

II. EXISTING SCENARIO & PROBLEMS

The present day electric vehicle is efficient than petrol/diesel vehicles. They are 97% cleaner than gas-powered cars. The main tenancy cost of electric cars is optimum. The main problems faced by electric vehicles are its inability to run long distances before being charged again and the high initial cost of the electric vehicles. Most production electric cars about to hit the market can only go about 100miles (160.9kms). Also there is need for installation of charging stations as the energy densities of normal batteries is lessforvehiclestotraveloverlongdistancesandgettingafullcharg etakes around eight hours.

III. COMPONENTS USED IN THE PROPOSED MODEL

A. IC Engine

The internal combustion engine is an engine in which the combustion of a fuel (normally fossil fuel) occurs with an oxidizer (usually air) in a combustion chamber. The expansion of the high-temperature and high-pressure gases produced by combustion apply direct force to the piston. Here were place the spark plugs by electro magnet and a permanent magnet is mounted on the piston. The piston moves to and fro due to attractive and repulsive forces, when the electro magnet is energized. We can use a 4-stroke IC engine for the vehicle.

B. Electromagnet

When a current carrying conduct or is wound on a magnetic material(ferrite),it acts as a magnet till the conductor is live. An air core electromagnet that acts as asolenoid is used here. Since it has an air core, the core losses are eliminated.

C. Permanent magnet

A permanent magnet is a piece of magnetic material that retains its magnet is meven after being removed from an external magnetic field. The permanent magnets which have produced the largest magnetic flux with the smallest mass are the rare earth magnets based on samariumandneodymium.Son32grademagnetscanbeused.

D. DC Battery

We use a 48 Vdc battery to supply power to the whole system. Lithiumion batteries can be used as they can have efficiencies of around 99%.

E. H-bridge inverter

A device that converts dc power into a c power at desired output voltage and frequency is called an inverter. The dc power input is obtained from the dc battery used here. Since half bridge inverters require 3-wiredc supply, we use a single phase full bridge voltage source inverter to convert the dc supply into AC (square) wave. The output voltage is therefore doubled and the output power is increased by four times. MOSFETs are used as switching elements since self commutation with base or gate drive signal scan be employed for their turn-on and turn-off.

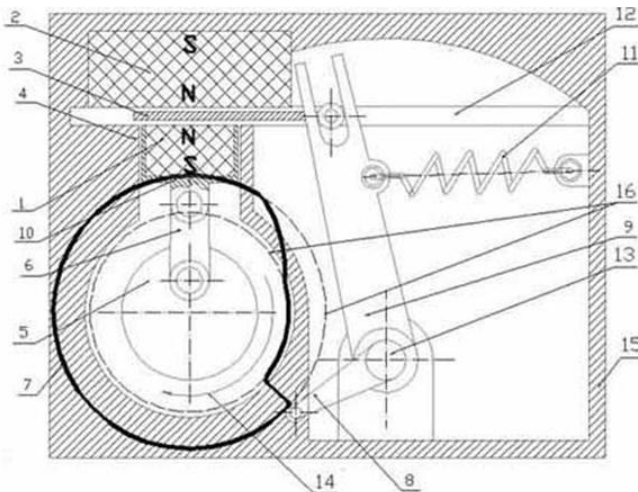
F. Hall effect sensor

We use hall effect sensors to trigger the MOSFETs. Hall effect sensor is a transducer that varies it's output voltage in response to changes in magnetic field. With a known magnetic field, its distance from the Hall plate can be determined. Using groups of sensors, the relative position of the magnet can be deduced.

IV. WORKING

The main idea behind the project is to modify the existing IC engine into an electro magnetically reciprocating engine by replacing the spark plugs by strong electromagnets and conductors. It consists of four cylinders. A stack of permanent magnets is mounted on the piston head with its north/south pole always facing the fixed electromagnet. If a magnetic material is wound by a current carrying conductor, then it will act as a magnet whose field strength depends on the amount of current flowing through the conductor. When the electro magnet on top of the cylinder is excited by an ac supply (square wave), it acquires positive and negative charges for each half of the supply. For instance, the electro magnet will act as a North pole for positive supply and South pole for the other or vice versa. This leads to the attraction and repulsion of the permanent magnet on the piston head due to which the piston moves to and fro. So when the magnet of cylinders 1 & 4 experience attraction causing the piston to move upwards, the magnets inside cylinders 2 & 3 experience attraction making the piston move downwards. This to and fro motion of the piston inside the cylinder rotates the crankshaft which makes the wheels to rotate. This causes the motion of the vehicle.

V. ELECTRO MAGNETIC ENGINE

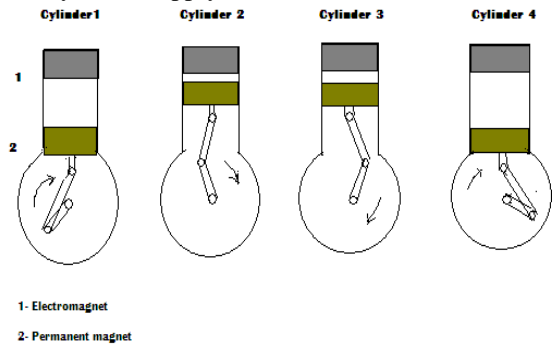


- 1-mobile magnet(piston);
- 2-upper fixed magnet;
- 3-ferromagnetic shutter;
- 4-cylinder of engine;
- 5-crankshaft;
- 6-connecting rod;
- 7-profile of Cam;
- 8-rotary pusher;
- 9-lever to drive the shutter;
- 10-piston of engine;
- 11-spring of the backward motion of shutter;
- 12-guides of shutter;
- 13-axis of lever;
- 14-direction of rotation of the shaft of engine;
- 15-engine block;
- 16-circle of the minimum and maximum displacement of the

pusher.

A. Engine Model

The current necessary to excite the electromagnet is obtained after the conversion of the dc supply from the battery into ac supply by the H-bridge inverter. The hall sensor senses a pole (North/South) and gives a high/low output. Thus the MOSFETs are triggered to get an ac supply. The output of the hall sensor remains constant till it encounters another pole after which the others of MOSFETs are triggered to change the polarity of the supply.



VI. FEATURES

This innovative technique allows extraction of energy in a clean way which reduces the emissions due to which pollution is minimized to a large extent. So the health issues arising due to pollution can be eradicated to some extent. The salient feature of this engine is that it does not require fossil fuel storage. Also, it does not need motor for operation. The starting torque of the engine is high. The life of the battery source is increased since the battery is charged simultaneously while the engine is running. The greatest advantage is that these engines need not be specially manufactured, as existing engines can be easily modified to work this way. The weight of the vehicle is reduced, thus improving the efficiency of the vehicle. The main maintenance cost is optimum.

VII. 6. CONCLUSION

In this paper, we have depicted a revolutionary engine which need not be separately manufactured, but existing engines can be easily modified to work this way. The proposed engine is as simple and excellent technique to run the electric vehicle in a highly efficient manner.

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