The Levitable Engine

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Abstract: The prototype model namely ‘LEVITABLE ENGINE’ is the engine works on the principle of electricity and magnetism. This engine is similar in construction as that of typical IC engine. But the construction is totally different compared to IC engine. The Engine runs using Battery and Dynamo and it can achieve high speed due to less friction. This method provides an environmental friendly, very high efficiency engine that can complement or replace any engines that use fossil fuel, bio-fuel, solar power, wind power, hydro power, electricity, storage energy, or other energy sources. These engine does not require any input source and works on the magnetic force of its own, thus it is eco-friendly and can be used in running automobiles, industrial application, power generation, etc. The engine can be best alternative for any type of fuel consumption engines.

Keywords: Electromagnet, Ecofriendly, Levitation, Dynamo

1. Introduction

This is a project to be achieved as early as possible to achieve a pollution less environment and a vehicle which can run through renewable fuels. In this project we are going to design a piston of engine using the magnetic levitation. In this, it is planned to run an engine, using battery and dynamo that gives the magnetism to the electromagnetic material used in piston cylinder.

2. Principle

This is an electromagnetic engine, which runs using the electricity and magnetism. In the engine the Cylinder is designed with the magnetic material in such a way that the piston will have to and fro motion and with less friction and the piston is designed in such a way that it will have repulsions with the walls of the cylinder so that there will be only air friction that gives a high torque.

3. Components

Components play a main role in the designing the engine and the components to this engine, and engine are made of different materials the main components of the Levitable engine are as follows

- Main components of the engine are:
  - Piston
  - Cylinder
  - Crank shaft
  - Clutch
  - Gears
  - Magnetic material
  - Dynamo
  - Batteries

Piston
Shape of piston is rectangular cuboid. We know that piston plays the major role in the construction of the engine is different, when compared to that of IC engine (Internal combustible engine). In this engine we are going to design the piston using the diamagnetic material.
Clutch
This engine also consists of the clutch as that of the IC engine. We are going to design a vehicle which is running with gears, so as to control the speeds. So, a clutch is required for the vehicle to change gears.

Gears
Gears are required for controlling the speeds. In order to control the speed of engine, the gears are designed in such a way that is efficient to control the speed of the engine.

- Remaining parts
- Magnetic material

The magnetic material used in this engine are pure diamagnetized. The piston is made of copper. The cylinder with 4 surfaces are made with diamagnetic material so as to levitate the piston head as shown in figure.

Dynamo
Dynamo is used as the source for charging the battery which converts mechanical energy to electric energy.

Batteries
So the source of electricity is using the lead acid battery or any other new batteries for AC currents. We are going to use the batteries which are efficient enough to produce electricity of 230 volts.

Construction
In this engine we are going to include all the parts that belonging to IC engine ie, carburetor, fuel injection system, exhaust and spark plug. This engine construction is totally different when compared to IC engine. The engine consists of piston & cylinder, but there will be no contact between the cylinder and piston because the principle used in the engine is to decrease friction between the cylinder and the piston. This engine runs using battery and dynamo. In this all the sides of the cylinder are made with diamagnetic material and piston is placed inside the cylinder made with magnetic material. To avoid friction connecting rod is made up of Non magnetic material.

4. Working Procedure
- As we know diamagnetic repels each other similarly there will be repulsion between the piston and the cylinder surface so that the friction is negligible that is air friction so that we can attain high speeds.
- The piston is made with NDFEB (Neodymium ferrous bismuth) which is a permanent magnet.
- The connecting rod is made with non magnetic material, so that the connecting rod does not attract to the cylinder.
- We know that we are not using any combustible material, we doesn’t require any material with high melting points.
- The same material is used to make the rectangular cuboids of the piston. In this engine there are no oil rings for piston.
- This piston is going to be designed in such a way that there will be a built in sensor to control the inner temperature due to air friction.
- In the cylinder there is a design of the magnetism in such a way that the piston should move to and fro.
- In this cylinder we are going to give the current to the top surface and the ideas are designed with diamagnetic materials in such a way that there is no deflection in the angle of piston head.
- The cylinder is also designed using the diamagnetic material in order to have diamagnetic repulsion between the cylinder and piston.
- In this engine the piston move with high speeds. Therefore the gears are made with cast-iron so as to bear the temperature that may arise due to friction.
- In this engine, the gear system is automatic gear system.
- Regenerating the magnetic property will not be gone as there will not be any heat applied on it.
Advantages
• It can achieve high speed due to less friction.
• It is fuel less engine which gives high efficiency than a motor engine.
• Regarding the maintenance there will not be any problem in the working of piston for 30 years.

CAD Model

Figure: shows the arrangement of levitable engine.

5. Conclusion
• At first we have started an idea that we will use levitation and propulsion later there are many changes in the design of the engine the changes are as follows:-
• The change in shape of piston head design from cylindrical to cubical.
• The change in concept of levitation and repulsion.
• Change in the cylinder material to dia magnetic material.

6. Future Scope
This engine is highly efficient as it does not uses any input source and it works on its own power. It has the possibility of reaching unity-over operation mode as the consumption of fuel can be reduced.

References