

TITLE OF INVENTION

A MEAN TO INCREASE THE MOLECULAR SIZE OF ATOMS AND MOLECULES IN INTERNAL COMBUSTION ENGINE AND METHOD OF INSTALLING THE SAME IN INTERNAL COMBUSTION ENGINE (ICE)

5 BACKGROUND OF THE INVENTION:

1. Field of the Invention

The present invention is related to a means to increase the molecular size of atoms and molecules for internal combustion engines (ICE) and, more particularly, is directed towards a fuel economy means for an internal combustion engine which, when applied to a motor
10 vehicle, enables vastly improved gas mileage to be obtained.

2. Description of the Prior Art

Many prior art related to fuel saving in internal combustion engine of a vehicle have been proposed. In order to save fuel and to increase gas mileage, much work has been done with a view towards reducing pollutant emissions from motor vehicles. Conventional method such
15 as the use of permanent magnets to impose magnetic energy upon fuel molecules flowing through the insert en route to a combustion chamber prior to combustion therein.

Many and various apparatus, devices, and the like are known to increase the efficiency of fuel consumption. For example, U.S. Pat. No. 5,129,382 discloses a device for improving fuel efficiency which includes at least one magnet for magnetically "charging" fuel fluids fed
20 through a fluid passageway into a combustion chamber of an apparatus with which the device is used. The '382 device includes a housing containing the at least one permanent magnet positioned adjacent the fluid passageway, where the north pole of the magnet preferably faces the fluid passageway. The '382 patent asserts that the magnetic field created by the at least one permanent magnet is responsible for an improved fuel efficiency, an improved power
25 production a reduction of carbon build-up on engine parts, and a reduction of pollutants normally found in combustion exhaust gases. The fluid passageway is preferably made of non-magnetic material.

Examples of other devices which utilize magnetism to improve the fuel-combustion efficiency of combustion engines are shown in U.S. Pat. Nos. 4,461,262, and 4,572,145.

30 U.S. Pat. No. 4,461,262 discloses a fuel treatment device comprising a fuel line and a pair of magnets positioned at an inlet for incoming fuel. Each of the magnets is positioned with its south magnetic pole arranged to face upstream of the fuel line and its north magnetic pole

placed closest to a mixing zone. Fuel passes initially through the flux generated by the south pole, and then the flux of the opposed north pole, allegedly improving combustion efficiency.

U.S. Pat. No. 4,572,145 discloses a magnetic fuel treatment device comprising a magnet embedded in a unshaped body of non-magnetic material adapted to fit over a fuel line. The magnet is positioned so that its north pole is spaced apart from the fuel line and its south pole is adjacent the fuel line. It is the flux imposed by the magnet's south pole which affects the fuel as alleged in the patent document. The magnet is embedded in a unshaped body of a non-magnetic material adapted to fit over the fuel line.

Chinese Patent No. 94231684.3 discloses a fuel efficiency improving device which utilizes the magnetic field generated by pairs of diametrically opposed permanent magnets which comprise the device. The Chinese Patent describes a magnetic energy-saving purifier element and asserts in the writing that the use of same device will markedly increase the combusting efficiency of gas- and/or oil-burning (powered) machinery, such as trucks, automobiles, etc., that is, internal combustion engines up to twenty percent (20%). The Chinese patent disclosure asserts that fuel processing by the device is the result of a stationary magnetic field imposed at a particular portion of the purifier element (improved fuel-saver device) where all fuel must pass to enter the combusting chamber, which affects the moving fluid/gas at the molecular level (microscopically).

SUMMARY OF THE INVENTION

It is therefore an object of this invention to provide a fuel saving device made into sheet material, the device comprising: (a) a first sheet material being made from magnetic powder material including nickel, iron, silver and zinc in the ratio of (13-15%):(35%-55%):(0.3% to 0.5%):(32%-51%) in a powdered form fused and compacted together by a synthetic rubber layer at 155°C. The first sheet material is glued and stacked on top of each other to form up a final sheet material of thickness ranging from 0.3 mm to 6 mm, wherein (varying thickness of materials are used in varying mounting distances to a specific position.)

Still another object of the present invention is to provide a fuel saving device made into sheet material, further comprising (d) a layer of paint applied to the combined layered sheet material obtained in step (a) above for aesthetic purposes.

A further object of the present invention is to provide a fuel saving device, wherein the sheet material is cut to a size and shape which are adaptable to mount at the top and side shields of the internal combustion engine.

Yet a further object of the present invention is to provide a fuel saving device, wherein the sheet material is cut to a size and shape which are mounted at the air inlet section of the internal combustion engine to enable atmospheric air to gain a higher energy.

Another object of the present invention is to provide a method of installing a fuel saving sheet material to an Internal Combustion Engine (ICE) having a top, an air inlet section, a plurality of side shields, comprising the steps of :

(a) cutting the sheet material to a size of between 10 mm by 10 mm to 240mm by 303mm or in circular shapes of between 15mm and 60mm and a shape adaptable to the ICE;

(b) mounting the cut sheet material onto the top and side shields of the internal combustion engine; and

(c) mounting a second piece of cut sheet material from step (a) on the exterior of the intake port of the air intake section (1 set) and internal surface before the air filter (1 set) of the internal combustion engine, thereby atmospheric air around the intake section gains a higher energy level by having a larger molecular size.

Yet another object of the present invention is to provide a method of installing a fuel saving sheet material, wherein the number of layer of the sheet material varies the intensity and effects of the sheet material. This is to compensate for the different mounting distances (away from the engine block), engine block material, block metal thickness, block size and also different sizes of air intake port for different engines.

Yet a further object of the present invention is to provide a process for improving fuel combusting efficiency in an internal combustion engine, the process including the steps of: mounting a fuel saving device on the top and side shields of an internal combustion engine and the intake section of the ICE; wherein the fuel saving device comprises a plurality layers of sheet material being manufactured with Nickel, Iron, Silver and zinc ; a rubber sheet sintered with the first sheet material; and another layer from (a) to be mounted to sheet (b) by glue or by stacking to each other to form a sheet material of a thickness ranging from 0.3 mm to 6 mm, wherein the cut sheet material is mounted at the air intake section of the ICE and the side shields of the ICE, wherein the operation of the ICE renders the fuel being improved in combustion efficiency.

Another object of the present invention is to provide a fuel saving device wherein the sheet material is installed on the surface of the top of the internal combustion engine block and/or the side shields of the internal combustion engine block.

Still another object of this invention is to provide a fuel saving device for an internal combustion engine which can be readily installed on the engine and which is relatively maintenance free.

Other objects, features and advantages of the present invention will be readily apparent from the following detailed description taken in connection with the accompanying drawings.

5 **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a flowchart showing the fabrication of the fuel saving material in accordance with the present invention.

FIG. 2 is a schematic view showing the status of molecules of fuel with respect to air direction in accordance with the present invention.

10 FIG. 3 is a graph showing the result of the test being an increase of horsepower of up to 6 hp in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Before explaining the present invention in detail it is to be understood that the invention is not limited in its application to the details of construction and arrangements of parts illustrated in
15 the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

The terms in which this specification has been described must at all times be considered in a wide and non-limitative sense.

20 The present invention embodies a fuel saving device for internal combustion engines (ICE) by causing air molecules to expand in the direction of air flow in the air intake tunnel of an ICE.

Referring now to the drawings wherein like reference numerals refer to like in the drawings the preferred embodiment of the invention disclosed in FIGS. 1-2.

In the preferred embodiment of the present invention, the fuel saving device (hereinafter
25 referred to as FIBELO) comprises (a) a first sheet material being made from powder material including nickel, iron, silver and zinc in the ratio (13-15%):(35%-55%):(0.3% to 0.5%):(32%-51%) in a powdered form fused and compacted together by a synthetic rubber layer at 155°C. The first sheet material is glued and stacked on top of each other to form up a final sheet material (FIBELO) of thickness ranging from 0.3 mm to 6 mm, wherein the sheet material is
30 mounted onto the top and the side shields of an internal combustion engine (ICE) which will

increase the molecular size of atoms and molecule to improve reactivity of the primary propellant (gasoline, diesel or LPG) with oxygen.

The sheet material or the fuel saving device (100) of the present invention emits an Aquiver Wave resulting in negative electrons within the molecules/atoms to vibrate at higher frequency which increase the size of air molecules/atoms in the surrounding atmosphere. The air molecules/atoms' energy level increases and readily to flow at a faster rate. The sheet material (100) is capable of restructure molecules/atoms in liquid, gas state in the same way except for solid state at quantum mechanics level. The sheet material (100) can only vibrate the molecules/atoms at higher frequency in solid state. Further, the sheet material (100) in accordance with the present invention is capable of increase the number of moving electrons and faster flow rate in the electricity resulting in higher electrical current output.

FIG. 2 is a schematic view showing air molecules that nearer to the sheet material of the present invention expanded larger in sizes in accordance with the present invention. As shown in the figure, air is flowing in the direction indicated as reference number (20) from one end of an air intake tunnel (22), larger sides molecules of air are found at the side of the air tunnel (22) having the sheet material. Smaller molecules are found at the exit end of the air intake tunnel (22).

In accordance with the present invention, the fuel saving device (100) is made up of material such as nickel, iron, silver and zinc, and these materials are sintered with rubber to form the sheet material.

The four materials are supplied in powdered form (Fe 10um, Ni 50um, Ag 10um, Zn 50um) and measured out in the appropriate percentage by weight. The powders are mixed using a v mixer and then moved on to be formed into sheet material by sintering with rubber material at 155°C. The material is finally hot-calendar rolled to form a smooth surface. This sheet material is stacked one on another in the assembly department to form up the final required thickness (between 0.3mm and 6mm). A final double sided adhesive layer is applied to one side to enable simple installation. The double sided adhesive layer is dependent on the thickness of the final required thickness (weight), installation surface (porous or smooth) and surface operating temperature.

The fuel saving device (100) in the form of a sheet can be then coated with a layer of paint (currently optional). The purpose of having the paint is for aesthetic purposes. This will also be used for marking of different batch production, different mixtures in the future or for customer-requested colours.

The fuel saving sheet material (100) is then cut into a size and shape which are adaptable to mount the device on the top and side shields of the internal combustion engine. In a preferred embodiment, the size of the sheet material is ranging from 10 mmx by 10 mmy to 240mmx by 303mmy or in circular form between 20mm and 60mm. The cut sheet material is also mounted
 5 at the air inlet section of the internal combustion engine to enable atmospheric air to gain a higher energy.

The higher energy to the engine is generated by an increase in liquid molecular size (atmospheric air) and a higher density air is delivered to engines to enable a more complete combustion with carbon removal and a reduction of harmful NOx gases as side effects.

- 10 The fuel saving device (100) of this invention is mounted to the Internal Combustion Engine. The mounting or installation to an appropriate position of the engine is important for insuring the maximum efficiency thereof with regard to a propellant burning automobile engine.

In the installation process, mounting distance of the rectangular pieces or circles to the engine of the vehicle is physically measured from shield to the main engine block. Then, the fuel
 15 saving device is also installed at the port section of the air intake tunnel (22) of the engine. The air intake tunnel (22) is located between the air intake port and just before the air filter.

For diesel fuel vehicle the method of installation of the fuel saving device is similar.

For engines without a shield, a bracket will need to be formed/fabricated to ensure proper distance mounting and maximum effect.

- 20 The ideal mounting position of the fuel saving device is between 60mm to 100 mm from the centre of each row of spark coils of an engine.

The specific distance mounting between the fuel saving device and the engine (block) is determined based on the distance between the heat shield and the block and also the thickness/size of the engine block. Other factors to consider is the amount and distance of
 25 other items (electronic parts, plastic covers, cabling, pipings and hoses between the shield and main engine block).

The fuel saving device (100) of the present invention is also workable on a motorcycle. The material sheet is mounted inside the air filter box of the motor engine for maximum effect.

- 30 In accordance with the present invention, the device (100) should not be mounted on any fuel transporting pipe, hose, filter or manifold unless professionally advised.

The device should not be mounted on any moving parts (shafts, pulleys, belts etc) except when professionally advised or in certified installation instances.

The device should not be mounted on surfaces which temperatures can potentially exceed 125°C. (eg. Exhaust manifolds).

- 5 The device should not be mounted on surfaces which are submerged in water (>24hrs)

The device is also applicable to old cars as tested on many cars (>10 years old). The fuel saving device (100) serves to increase the power output (hp) for the cars and also remove the carbon buildup due to an increase in efficiency by complete fuel combustion. Older cars generally have a greater effect as there are less onboard computers to compensate for the increase in air and in power output. In accordance with the present invention, it is noted that for all engines, maximum effect is achieved after at least 5 full tanks of gas or 3 months of usage.

Gasoline-powered internal combustion engine draws air from the atmosphere and gasoline, a hydrocarbon fuel and through the process of combustion, about 20% of fuel is used to propel the vehicle, and the remaining 80% is lost to friction, aerodynamic, accessory operation, or simply wasted as heat transferred to cooling system.

Within the atmospheric air, about 21% oxygen, & 78% Nitrogen, and 1% mixture of other gases. The sheet material of the present invention is mounted at the air intake system of the engine, the oxygen molecules/atoms size increase, and oxygen molecules/atoms flow rate is higher. If the sheet material is mounted in bonnet or engine block, higher electrical current resulting in stronger firing from spark plugs of the engine, and the gasoline molecules/atoms size increase in the fuel line, and the flowrate is higher in the fuel line.

In the course of combustion, when the sheet material of the present invention is applied, about 30% or more of the gasoline is used to propel the vehicle and the remaining 70% of the gasoline is lost to friction, aerodynamic, accessory operation or simply wasted as heat transferred to cooling system. In other words, the sheet material of the present invention restructures the molecules/atoms in atmospheric air, hydrocarbon fuel, electricity to support more complete combustion in the engine to produce higher torque and horsepower. In addition, higher volumetric efficiency in the air intake resulting to more complete combustion by about 10%.

Although Nitrogen molecules/atoms size, quantity and flow rate increases, but it would pass through combustion chamber without being affected. The heat range in the combustion

chamber of the engine remains constant, thus Nitrogen dioxide level will not be affected by the size, quantity and the flowrate of nitrogen.

In a preferred embodiment of the present invention, the installing of the fuel saving sheet material to an Internal Combustion Engine (ICE) having a top, an air inlet section, a plurality
5 of side shields comprises the steps of :

First, the sheet material is cut to a size of between 10 mmx by 10 mmy to 240mmx by 303mmy or in circular form between 20mm and 60mm and in a shape which is adaptable to the side and top shields or cover of the ICE. Second, the cut piece of the sheet material is mounting
(by the adhesive applied in the last step of production) onto the top and side shields of the
10 internal combustion engine. Third, a second piece of the cut sheet material from the first step is then mounted onto the air intake section of the internal combustion engine.

In accordance with the present invention, the number of layer of the sheet material (thickness) mounted onto the ICE at the same position will change the intensity and effects of the sheet material used as the fuel saving device. The distance of mounting will also affect the effect
15 sheet material used on the ICE.

The present invention is also related to a process for improving fuel combusting efficiency in an internal combustion engine. The process includes the steps of:

mounting a fuel saving device on the top and side shields of an internal combustion engine and the intake section of the ICE; wherein the fuel saving device comprises (a) a plurality
20 layers of sheet material being manufactured with Nickle, Iron, Silver and zinc,

(b) a rubber sheet sintered with the first sheet material; and

(c) another layer from (a) to be mounted to sheet (b) by glue or by stacking to each other to form a sheet material of a thickness ranging from x mm to y mm, wherein the cut sheet material is mounted at the intake section of the ICE and the side shields of the ICE, wherein the
25 operation of the ICE renders the fuel being improved in combustion efficiency.

In a preferred embodiment in accordance with the present invention, the fuel saving device is a material which is fabricated in sheet. The material being in the form of a sheet is a magnetic powder material formed from nickel, iron, silver and zinc. The four materials are supplied in powdered form (Fe 10um, Ni 50um, Ag 10um, Zn 50um) and measured out in the appropriate
30 percentage by weight. The powders are mixed using a v mixer and then formed into sheet material by sintering with rubber material at 155°C. The material is finally hot-calendar rolled to form a smooth surface. This sheet material is stacked one on another in the assembly

department to form up the final required thickness (between 0.3mm and 6mm). A final double sided adhesive layer is applied to one side to enable simple installation. The double sided adhesive layer is dependent on the thickness of the final required thickness (weight), installation surface (porous or smooth) and surface operating temperature.

- 5 A plurality of this sheet material are glued and stacked together to vary the intensity and the effect of the material. A layer of paint is optionally applied at the final step of fabrication of the glued and stacked material so as to give a visual effect to the product.

The effect of the sheet material in accordance with the present invention causes the outer valence shell electrons on an atomic level in solid, liquid and gaseous state elements and compounds to have weakened attraction to the nucleus of each atom by blocking of radio-frequency waves of specific frequencies determined by the number of layers of construction of the above materials. Owing to the fact that the electrons of atoms and molecules in the outer valence shell move further from the nucleus of the atoms and molecules and in particular interest of this invention, the O₂ (oxygen) molecule (due to the mounting at the air intake area) and also the alkanes and other flammable components in propellants (from mountings at the engine shield areas), it takes less energy to lose or gain an electron. Therefore, this has an immediate effect on the size and reactivity of the atom or molecule (of O₂ (oxygen and alkanes). Such atoms or molecules affected by the material will have each valence shell be further from the nucleus, be bigger, more reactive due to less energy required to release or gain electrons and have an overall higher energy level.

The working of the fuel saving is described as follows:

The sheet material of the present invention mounted at the top and side engine shields to increases the rate of fuel burnt in the internal combustion engine with increased energy levels and more reactivity on a molecular level in alkane and oxidizer components, such as petrol, diesel or LPG propellants. The end result of such reaction is to enable complete combustion of fuel and oxidizer components to increase power output and reduce harmful unburnt gases released as a by-product of the combustion process in the internal combustion engine.

In accordance with the present invention, the sheet material is fabricated into a plurality of layers, and the thickness of the layer is ranging from 0.3 to 6 mm. The layer is then cut to a size and shape adapted for the installation of the internal combustion engine to be mounted on the top and side shields of the ICE engine block. The method of mounting includes by means of a glue, tape, plastic straps, waterproof shield or a customised bracket.

Another installation of the material is at the air intake section of the internal combustion engine so as to enable atmospheric air to also gain a higher energy level. (the larger O₂ molecular valence shell and further distance of the electron from the nucleus means it require less energy to release or gain an electrons, resulting in less energy loss and thus a higher efficiency is obtained.) In accordance with the present invention, a lower consumption of fuel is measured in such specific installation.

Upon the mounting of the sheet material to the internal combustion engine, experiments on fuel consumption is done on and measurements before installation and after installation is recorded. Each road-motor vehicle is tested on a dynamometer before installation of the sheet materials at the specific locations of the internal combustion engine mentioned above.

The vehicle is then proceeded to test again on the same dynamometer after installation of the sheet material of the present invention. Referring to FIG. 3, which is a graph showing the result of the test being an increase of horsepower of up to 6 hp in accordance with the present invention. The result of the test indicates an increase of horsepower of up to 6 hp being measured. A lower fuel consumption is also measurably noticed in different vehicles across different platforms on testing. Lower fuel consumption is measured based on distance travelled in vehicles per tank of fuel. Distances gained can vary from 40km to 270km depending on vehicle type, tank size. Before/after comparisons are done on the same vehicle and similar traffic conditions across multiple runs both before and after. Gains are permanent. Diesel generators are measured based on runtime per tank of fuel and on similar loads. Additional runtime of between 5% to 38% has been recorded, depending on type, size and age of generator. Before/after comparisons are done on each generator under the same energy loading characteristics across multiple tanks of diesel for before and after comparisons. Gains are permanent.

In accordance with the present invention, the shape, the size and the thickness of the sheet material need to be fine tuned before the material is being installed to a vehicle. For best performance, the material is customised for each installation to an ICE.

The sheet material accordance to the present invention that installed at the top and the side shields and the inlet section of the ICE causes changes to the outer valence shell of atoms and molecules by blocking out radio waves of specific frequencies (generated by RF equipment in the built-up environment and can be from electronic communication devices, radios and electrical noise from within the engine control computers and devices) which will then cause the nucleus to exert a smaller attraction force on the electrons in the outermost valence shell. This in turn will cause the atom or molecules of alkanes and oxidizers to have a higher energy level as the material will take less energy to release the electron out or join

up more electrons. The weakened attraction force will also cause the atom or molecules to increase in size based on calculating the effective nuclear charge of the electrons.

The invention should not be limited to internal combustion engine. The sheet material that mounted to the ICE allows more efficient combustion. Those skilled in the art will recognize numerous modifications to the preferred embodiment shown and described. Therefore, this invention should not be limited unless limitation is necessary due to the prior art or the nature and spirit of the appended claims.

While this invention has been described in the attached illustrations and drawings in preferred embodiments, it will be appreciated by those skilled in the art that additions, modifications, substitutions and deletions not specifically described may be made without departing from the spirit and scope of the invention defined in the appended claims.

WHAT IS CLAIMED IS:

1. A fuel saving device in a form of sheet material, the device comprising:

(a) a sheet material formed from powdered form (Fe 10um, Ni 50um, Ag 10um, Zn 50um) and measured out in the appropriate percentage by weight as (13-15%):(35%-55%):(0.3% to 0.5%):(32%-51%), wherein the powdered form material are mixed using a v mixer and then moved on to be formed into sheet material by sintering with rubber material at 155°C, and the material is finally hot-calendar rolled to form a smooth surface, and the sheet material is stacked one on another in the assembly department to form up the final required thickness (between 0.3mm and 6mm);

(b) another layer by stacking to each other to form a sheet material of thickness ranging from 0.3 mm to 6 mm, wherein a final double sided adhesive layer is applied to one side to enable simple installation and the double sided adhesive layer is dependent on the thickness of the final required thickness (weight), installation surface (porous or smooth) and surface operating temperature.

2. The fuel saving device made into sheet material as set forth in Claim 1, further comprising

(c) a layer of paint applied to the combined layered sheet material obtained at (b) of Claim 1.

3. The fuel saving device as set forth in Claim 1, wherein the sheet material is cut to a size of and shape which are adaptable to mount at the top and side shields of the internal combustion engine.

4. The fuel saving device as set forth in Claim 1 or Claim 3, wherein the sheet material is cut to a size and shape which are mounted at the air inlet section of the internal combustion engine to enable atmospheric air to gain a higher energy.

5. A method of installing a fuel saving sheet material to an Internal Combustion Engine (ICE) having a top, an air inlet section, a plurality of side shields, comprising the steps of :

(a) cutting the sheet material to a size of 10 mmx by 10 mmy to 240mmx by 303mmy or in circular form between 20mm and 60mm and a shape adaptable to the ICE;

(b) mounting the cut sheet material onto the top and side shields of the internal combustion engine; and

(c) mounting a second piece of cut sheet material from step (a) onto the air intake section of the internal combustion engine, thereby atmospheric air around the intake section gains a higher energy level, and a higher energy to the engine is generated by an increase in liquid

molecular size (atmospheric air) and a higher density air is delivered to engines to enable a more complete combustion with carbon removal and a reduction of harmful NOx gases as side effects.

5 6. The method of installing a fuel saving sheet material as set forth in Claim 5, wherein the number of layer of the sheet material varies the intensity and effects of the sheet material.

7. A process for improving fuel combusting efficiency in an internal combustion engine, the process including the steps of:

10 mounting a fuel saving device as claimed in claim 1 on the top and side shields of an internal combustion engine and the intake section of the ICE; wherein the fuel saving device comprises a plurality layers of sheet material being manufactured with Nickle, Iron, Silver and zinc (13-15%):(35%-55%):(0.3% to 0.5%):(32%-51%) in a powdered form fused and compacted together by a synthetic rubber layer at 155°C, wherein a first sheet material is glued and stacked on top of each other to form up a final sheet material of thickness ranging from 0.3 mm to 6 mm wherein the cut sheet material is mounted at the intake section of the ICE and
15 the side shields of the ICE, wherein the operation of the ICE renders the fuel being improved in combustion efficiency.

8. The fuel saving device as set forth in Claim 1, wherein the sheet material is installed on the surface of the top of the internal combustion engine block.

20 9. The method of installing a fuel saving sheet material as set forth in Claim 5, wherein the sheet material is mounted to the engine block and/or an intake section of the engine block by means of a glue, tape, plastic straps, waterproof shield or a customised bracket.