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Search 2: SFT=((VACUUM 2W ENGINE) AND VALVE*) and IC=(F01B) (Results 73)

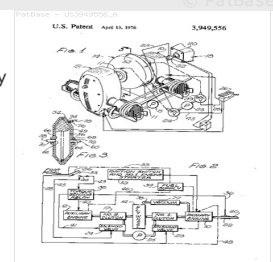
1) Family number: 1267736 (US3949556A)

MODULAR ENGINE ASSEMBLY

Abstract: Source: US3949556A A modular engine assembly incorporating a "floating" flywheel coupled to a primary engine. An auxiliary engine selectively engages the flywheel via an automatic clutch which is responsive to a torque sensor mounted on the transmission drive shaft, to provide additional power as needed.

Probable Assignee: WALLIS M

Earliest Publication Date: 19760413



2) Family number: 10470159 (RU2032833C)

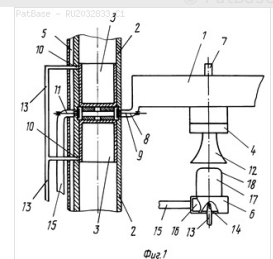
VACUUM ENGINE

Abstract: Source: RU2032833C

FIELD: power engineering. **SUBSTANCE:** engine comprises heater, cylinders, pistons, radiator, cooling jacket, ejector, and safety **valve**. The engine converts energy of working fluid into useful work inside the cylinder during forward stroke, in ejector during evacuation created by working fluid exhaust, and, again, inside the cylinder during reverse stroke under the action of vacuum. **EFFECT:** enhanced efficiency. 6 cl, 8 dwg

Probable Assignee: GYAVGYANEN YURIJ V

Earliest Publication Date: 19950410



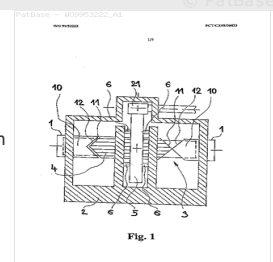
3) Family number: 11441100 (WO9953222A1)

DEVICE FOR CONVERTING A RECIPROCATING MOTION INTO A ROTARY MOTION OR VICE VERSA

Abstract: A device for transmitting a direct reverse motion to a rotary motion or vice versa, consists of a longitudinal component (3) provided on both ends with cylindrical sections (10), which are seated in a sliding and rotating way in guides (1) fixed to a frame (2). The longitudinal component (3) is provided, in the middle part between the guides (1), with a shoulder (4), having on faces turned towards the guides (1) at least one cut (11) with oblique sides, the shape of which corresponds with the shape of a recess (12), connected to the frame (2). Tops of the cuts (11) and/or tops of the recesses (12) are mutually turned a little.

Probable Assignee: SCHALLER PAVEL

Earliest Publication Date: 19991021



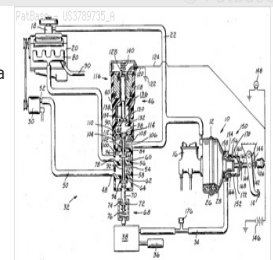
4) Family number: 1155811 (US3789735A)

DIVERTER VALVE MEANS FOR PRESSURE DIFFERENTIALLY OPERATED SERVOMOTOR

Abstract: Source: US3789735A A diverter **valve** for use in a vehicle having a power braking system operated by a pressure differential servomotor. The diverter **valve** directs air under pressure from an emission control pump to the servomotor in response to a signal generated upon actuation of the brake pedal to supply a first fluid under pressure which in conjunction with a second fluid creates the desired pressure differential in the servomotor.

Probable Assignee: BENDIX CORP

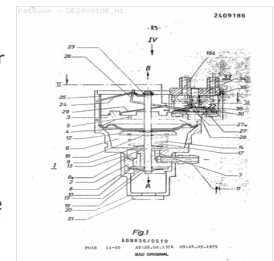
Earliest Publication Date: 19740205



5) Family number: 2096286 (DE2409186A1)

UNTERDRUCKBETRIEBENER, OSZILLIERENDER MOTOR VEHICULAR SECONDARY DRIVE OSCILLATING MOTOR - HAS VALVES CONNECTING RESPECTIVELY TO VACUUM AND ATMOSPHERIC PRESSURE

Abstract: Source: DE2409186A1 Patentansprueche W Unterdruckbetriebener,oszillierender Motor, ins besondere zur Verwendung fuer Kfz-Nebentriebe, wie zB fuer den Antrieb von Scheiben- oder Lichtstreu scheibenreinigern, der an einem Unterdrucksystem eines Fahrzeuges, zB hinter der Drosselklappe einer Brennkraftmaschine, anzuschliessen ist, des sen einer Hub unter der Wirkung des Unterdruckes und dessen anderer Hub unter der Wirkung eines bei dem einen Hub gespannten Kraftspeichers erfolgte da- durch gekennzeichnet, dass fuer den anderen Hub (B) die Verbindung (7, 11, 39) zum Unterdrucksystem 37 ge schlossen ist 2. Vacuum operating, oscillating motor, partic. for use in vehicular secondary drive applications, such as pulleys, etc., which is connected to the vacuum system of a vehicle, such as behind the throttle **valve** of an I.C. engine, the one stroke of which is produced by the effect of vacuum and the other by a power feed activated by the first stroke. The connection of the second stroke to the vacuum system is closed. The changeover control of the direction of movement is achieved by **valves** opening and closing in connections for vacuum and atmospheric pressure, whereby one **valve** for vacuum closes over a stop at the end of the work stroke, and the atmospheric pressure connecting **valve** opens and then closes over a stop at the end of the backwards stroke, causing the vacuum connection to open. A stop pin prevents both **valves** closing at the same time.



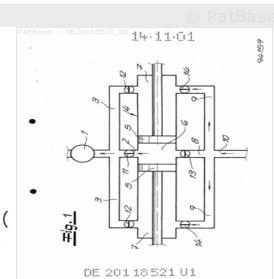
Probable Assignee: LUK LAMELLEN AND KUPPLUNGSBAU

Earliest Publication Date: 19750904

6) Family number: 23296033 (DE20118521U1)

VACUUM AIR MOTOR

Abstract: Source: DE20118521U1 (Claim 1) 1. Vakuu-Luft-Motor mit zumindest einer Vakuumpumpe (1), welche Vakuumpumpe (1) ueber Saugleitungen (2, 3) an zumindest einen Zylinder (4) angeschlossen ist,wobei in dem Zylinder (4) zwei Zylinderkolben (5) angeordnet sind, welche beiden Zylinderkolben (5) unter Verkleinerung eines mittigen kolbenvorderseitigen Zylinderabschnittes (6) und unter Vergrößerung zweier kolbenrueckseitiger Zylinderabschnitte (7) gegeneinanderbewegbar sind sowie unter Vergrößerung des mittigen kolbenvorderseitigen Zylinderabschnittes (6) und gleichzeitiger Verkleinerung der kolbenrueckseitigen Zylinderabschnitte (7) wieder auseinander bewegbar sind,wobei der mittige kolbenvorderseitige Zylinderabschnitt (6) ueber zumindest eine erste Saugleitung (2) an die Vakuumpumpe (1) angeschlossen ist und wobei die beiden kolbenrueckseitigen Zylinderabschnitte (7) ueber jeweils zumindest eine zweite Saugleitung (3) an die Vakuumpumpe (1) angeschlossen sind,wobei der mittige kolbenvorderseitige Zylinderabschnitt (6) bei geöffneter erster Saugleitung (2) und bei geschlossenen zweiten Saugleitungen (3) von der Vakuumpumpe (1) mit der Massgabe beaufschlagbar ist, dass die beiden Zylinderkolben (5) aufgrund des entstehenden Unterdrucks gegeneinanderbewegbar sind,wobei anschliessend die beiden kolbenrueckseitigen Zylinderabschnitte (7) bei geöffneter zweiten Saugleitungen (3) und geschlossener erster Saugleitung (2) von der Vakuumpumpe (1) mit der Massgabe beaufschlagbar sind, dass die beiden Zylinderkolben (5) aufgrund des in den kolbenrueckseitigen Zylinderabschnitten (7) entstehenden Unterdruckes auseinander bewegbar sindund wobei das Gegeneinanderbewegen und das Auseinanderbewegen der Zylinderkolben (5) bei Betrieb des Motors abwechselnd und kontinuierlich erfolgt.



Machine translation: (Claim 1) 1. Vacuum air motor with at least a vacuum pump (1), which vacuum pump (1) is attached over intakes (2, 3) to at least a cylinder (4), whereby in the cylinder (4) two cylinder pistons (5) are arranged, which are as well as against each other movable both cylinder pistons (5) under reduction of a centric piston-frontlateral cylinder section (6) and under enlargement of two piston-back cylinder sections (7) under enlargement of the centric piston-frontlateral cylinder section (6) and simultaneous reduction of the piston-back cylinder sections (7) again apart is movable, whereby the centric piston-frontlateral cylinder section (6) is attached over at least a first intake (2) to the vacuum pump (1) and whereby the two piston-back cylinder sections (7) are attached over at least in each case a second intake (3) to the vacuum pump (1), whereby the centric piston-frontlateral cylinder section (6) is subjectable during more opened first intake (2) and with closed second intakes (3) of the vacuum pump (1) under the condition that the two cylinder pistons (5) are against each other movable due to the developing negative pressure, whereby afterwards the two piston-back cylinder sections (7) are during opened second intakes (3) and more closed first intake (2) of the vacuum pump (1) under the condition subjectable that the two cylinder pistons (5) due to of the in the piston-back cylinder sections (7) of developing negative pressure movably sindund whereby the Gegeneinanderbewegen and the Auseinanderbewegen of the cylinder pistons (5) with enterprise of the engine alternating and continuously take place apart.

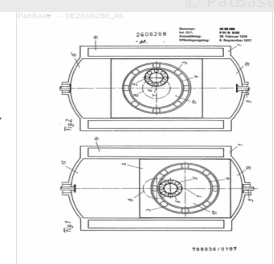
Probable Assignee: STEINERT MANFRED

Earliest Publication Date: 20020418

7) Family number: 2530747 (DE2608288A1)

ROLLKOLBENMASCHINE DOUBLE ACTING RECIPROCATING IC ENGINE - WITH DIRECT CONVERSION TO ROTARY MOTION, USING CRANK AND ECCENTRIC IDLER DISC

Abstract: Source: DE2608288A1 Ans brueche Y 1)Maschine insbesondere Brennkraftmaschine mit zumindest einem von einem Zylinder 1 aufgenommenen Kolben 2,der mit einem Exzenterzapfen 11,einem Exzenterwaelzlager 5,6 eines groesseren Waelzlager 3,4 (wobei die Waelzlager die Aufgabe eines exzentrisch gelagerten Kreises uebernehmen,der in einem zweiten groesseren Kreis,mit dem er aussermittig verbunden ist,um seine Lagerstelle bewegt wird,so dass der groessere Kreis auf einer Geraden entlang gefuehrt wird)mit der Kurbelwelle 13 in Verbindung steht und auf diese Drehmomente ausuebt,dadurch gekennzeichnet dass das Exzenterwaelzlager 5,6,in welchem der Exzenterzapfen ii steckt,aussermittig in das grosse Waelzlager 3,4,welches wiederum mit dem Kolben 2 in Verbindung steht,so eingelassen ist dass- sich der Kolben 2 bei Drehung der Kurbelwelle 13 axial verschiebt und somit im Zusammenwirken mit dem Zylinder 1 veraenderliche Arbeitsraeume 16,15 bildet T. Reciprocating IC engine with direct conversion to rotary motion achieves this by having a cylinder (1) with a working chamber (15, 16) at each end embodying the usual **valve** (9) etc. gear, carrying a transverse output shaft with its axis cutting that of the cylinder and ending in a crank with a throw equal to half the piston (2) stroke. The pin of this crank carries a roller bearing (5, 6) around which rotates a second roller bearing (3, 4) held in the piston, constrained to follow the first by an idler disc (17). Continuity of motion over the crank neutral position is ensured by a flywheel on the shaft, and a pinion on the crankpin engaging with a rack in the piston. Piston/cylinder cross-section need not be circular. Bearings other than roller ones may be used and the motion conversion gear may be fitted outside the cylinder.



Probable Assignee: HETTICH PETER

Earliest Publication Date: 19770908

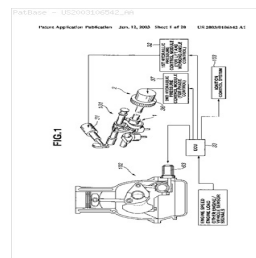
8) Family number: 28553315 (US2003106542A)

ENGINE CONTROL SYSTEM OF INTERNAL COMBUSTION ENGINE WITH VARIABLE COMPRESSION RATIO MECHANISM AND EXHAUST-GAS RECIRCULATION CONTROL SYSTEM

Abstract: Source: US2003106542A A combustion control system for a spark-ignition internal combustion engine includes a variable piston stroke characteristic mechanism changing a compression ratio of the engine, sensors detecting engine operating conditions, i.e., engine speed and engine load, and at least one of a variable lift and working angle control mechanism simultaneously continuously changing an intake-**valve** lift and an intake-**valve** working angle and a variable phase control mechanism changing an angular phase at a central angle corresponding to a maximum **valve** lift point of the intake **valve**. Also provided is a control unit that controls the variable piston stroke characteristic mechanism, and at least one of the variable lift and working angle control mechanism and the variable phase control mechanism, depending on the engine operating conditions.

Probable Assignee: NISSAN MOTOR CO LTD

Earliest Publication Date: 20030611



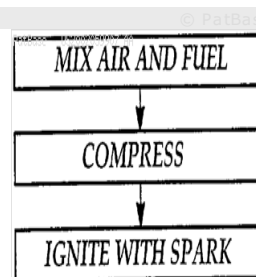
9) Family number: 30090330 (US2002059907A)

HOMOGENOUS CHARGE COMPRESSION IGNITION AND BARREL ENGINES

Abstract: Source: US2002059907A A homogenous charge compression ignition barrel engine includes an engine housing with a first and second end. An elongated power shaft is longitudinally disposed in the engine housing and defines a longitudinal axis of the engine. A plurality of cylinders surround the longitudinal axis with each cylinder having a closed end and an open end. Each cylinder has a central axis. The open ends of the cylinders are each generally directed toward the first end of the housing. An intake system is operable to introduce a combustible mixture of air and fuel into each of the cylinders. A track is disposed between the first end of the housing and the open ends of the cylinders such that a portion of the track is disposed generally in alignment with the central axis of each of the cylinders. The track has a cam surface that longitudinally undulates with respect to the open ends of the cylinders. A portion of the cam surface is disposed generally in alignment with the central axis of each of the cylinders. The track and the cylinders are rotatable with respect to each other such that the undulating cam surface moves with respect to the open ends of the cylinders. A piston is moveably disposed in each of the cylinders such that a combustion chamber is defined between the piston and the closed end of the cylinder. Each piston is in mechanical communication with the cam surface of the track such that as the cylinders and the track move with respect to each other, the pistons reciprocate within the cylinders. Each cylinder is operable to compress a combustible mixture until the mixture auto ignites, without the introduction of a spark.

Probable Assignee: THOMAS ENGINE CO

Earliest Publication Date: 20000928



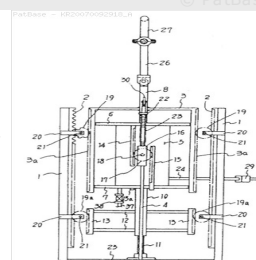
10) Family number: 40861653 (KR20070092918A)

GONGPAENSIK **ENGINE** USING **VACUUM** (MACHINE TRANSLATION)

Abstract: Source: KR20070092918A An air expanding **engine** using **vacuum** is provided to produce power by raising and lowering the entire cylinder unit by injecting or interrupting vacuum energy of high pressure into the interior of the cylinder. If a rack gear is lowered a little as a cylinder(5) is ascended, an chain(36) is instantaneously descended to endow the upward movement of the cylinder with a resilient force to double the force. The lifted cylinder rotates a crank rod(27) and passes through the top dead point to close an electronic **valve** of an air injection hose. At the same time, the electronic **valve** attached to the air injection hose is opened to rotate the crank rod. The electronic **valve** is closed to interrupt expansion energy of the cylinder rotating the crank rod.

Probable Assignee: JUNG BYEONG SUN

Earliest Publication Date: 20070914



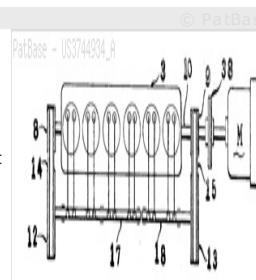
11) Family number: 4817011 (US3744934A)

AIR COMPRESSOR

Abstract: Source: US3744934A An air compressor and engine comprising a plurality of independent cylindrical compression chambers, each of said compression chambers having an inlet **valve**, an exhaust **valve** and a piston connected by rods to a crank-shaft, said plurality of chambers in two sets, the first set of chambers being greater in number than the second set of chambers, whereby the apparatus serves as an air compressor in which said first set of chambers are adapted for the primary compression chambers for feeding the compressed air to said second set of chambers provided for further compression of the air, or as an air compressor and engine in which said first set of chambers are adapted for the engine by means of suitable switching means, while said second set of chambers for an air compressor, or as an engine in which said first and second sets of chambers are adapted for the engine by means of said switching means.

Probable Assignee: LENO TAKAHIRO

Earliest Publication Date: 19701022



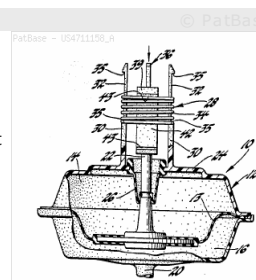
12) Family number: 5452181 (US4711158A)

LINEAR MOTION ACTUATOR WITH SPRING CENTERING MEANS

Abstract: Source: US4711158A A vacuum operated actuator is provided with a centering mechanism that operates with a single spring to normally locate the output in a mid-position and also return same from both an extended position and a retracted position. The centering mechanism also includes a connector that may be changed to adjust the output for connection with the device to be actuated without changing the centering and return operation.

Probable Assignee: GEN MOTORS CORP

Earliest Publication Date: 19871208



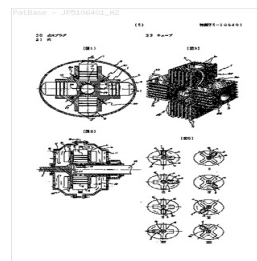
13) Family number: 6360075 (JP5106401A)

ROTARY MACHINE

Abstract: Source: JP5106401A PURPOSE: To obtain a rotary machine for effecting compression/expansion with excellent efficiency by mounting a rotor provided with radial cylinders in a housing and limiting the piston stroke in the cylinder to be non-circular at the side of the housing. CONSTITUTION: A rotor 1 has four radial cylinder cavities 3 passing through a port 4 through the central portion of the rotor 1. Pistons 5 with shoes or bearing elements 7 are arranged in opposite relationship in the cavities 3. The shoe or bearing element 7 is preferably contacted with the inner surface of an elliptical race or external edge 8. The race or external edge 8 engages with a housing. A variable-volume chamber is formed between the cavity 3 and the inner surface of the piston 5 to effect induction/compression/expansion/ exhaust strokes when used in an internal combustion engine.; In this way, it is possible to obtain a rotary machine with excellent efficiency.

Probable Assignee: ECHARREN UZABEL RICARDO MAR DEL PLATA BUENOS AIRES AR

Earliest Publication Date: 19921004



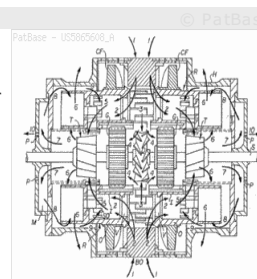
14) Family number: 11427147 (US5865608A)

AIR FLOW SYSTEM FOR CIRCULAR ROTARY TYPE ENGINES

Abstract: Source: US5865608A An air flow system for circular rotary engines which provides external air intake for engine cooling and combustion chamber pressurization and facilitates increased fuel efficiency and performance for either air/fuel intake and pressured fuel injection engines. In a circular rotary engine having opposed piston rotors, exterior air is drawn into the engine through intake slots in the engine housing and is then internally pressured in opposite directions by the blades of a central separator fan toward the backside of piston rotor cooling vanes, then directed internally to impeller fans at opposite ends of the engine to increase the air flow pressure for combustion chamber injection and produce piston rotor by-pass air flow for surface cooling. In a circular rotary engine having a single piston rotor and rotor guide flange, exterior air is drawn into the engine through intake slots in the engine housing and is then directed in opposite directions by the surfaces of the rotor and guide flange surfaces toward the backside of the piston rotor cooling vanes, then directed internally to the impeller fans at opposite ends of the engine.

Probable Assignee: GOODMAN WILLIAM A

Earliest Publication Date: 19990202



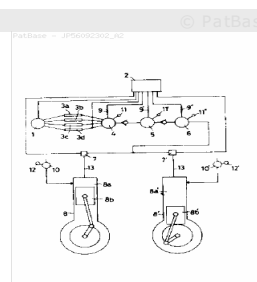
15) Family number: 1874509 (JP56092302A)

VACUUM ENGINE

Abstract: Source: JP56092302A PURPOSE: To obtain a driving force through operation of pistons, by evacuating the inside of cylinders, and then injecting a predetermined amount of compressed air having a predetermined amount of energy into the evacuated cylinders. CONSTITUTION: Electric compressors 1 are driven under control of an electronic control means 2 and compressed air thus produced is charged successively into air tanks 3aW3d. Compressed air in these tanks 3aW3d is carried successively into an intermediate-pressure chamber 4 by the control of the electronic means 2, and the compressed air in chamber 4 is compressed further by heating and expanding the same by a heating means 9 provided in the chamber 4. Then, the compressed air is carried to a high-pressure chamber 5 and a superhigh-pressure chamber 6, in which pressure of the compressed air is further raised by heating the same with respective heating means 9', 9". On the other hand, the inside of cylinders 8a, 8a' is evacuated successively by vacuum pumps 10, 10', and compressed air is injected into the evacuated cylinders 8a, 8a' via respective solenoid valves 7, 7' for driving pistons 8b, 8b'.

Probable Assignee: ARAI ISAMU

Earliest Publication Date: 19810727



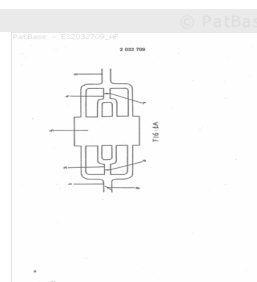
16) Family number: 18789176 (ES2032709A)

MODULAR ENGINE SYSTEM

Abstract: The "Modular engine system" is shown in Figure 1A and consists of the following elements: the main inlet manifold 1 and the secondary inlet manifold 2, the main exhaust manifold 3 and the secondary exhaust manifold 4, the engine 5, the valve for disconnection of the secondary inlet manifold 6 and the valve for disconnection of the secondary exhaust manifold 7, and the throttle valve of the accelerator 8 (only in otto-cycle engines). The system acts as follows: - when low power is required: the valves 6 and 7 are closed and the air/fuel mixture reaches only cylinders 1 and 4 where combustion takes place normally, whilst cylinders 2 and 3 are disconnected; - when high power is required: valves 6 and 7 are open and then the air/fuel mixture reaches all the cylinders, allowing maximum power to be obtained.

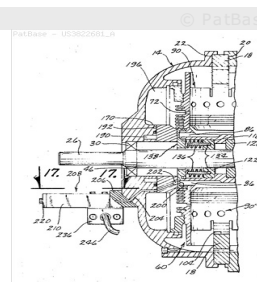
Probable Assignee: GUTIERREZ DE CEPEDA JUAN

Earliest Publication Date: 19930216



17) Family number: 19207847 (US3822681A)

ROTARY INTERNAL COMBUSTION ENGINE



Abstract: Source: US3822681A A rotary internal combustion engine is disclosed herein and generally comprises a rotor means having a plurality of cylinders spaced radially around a pivoting core. A free floating piston is slidably mounted in each of the cylinders with the head of the piston being positioned towards the center or core of the rotor. A roller is mounted in the skirt end of the piston which rides against a circular cam. The centrifugal force created by the rotation of the rotor causes the pistons to follow the internal cam surface of the cam during rotation. The core of the rotor is provided to supply air for purging and charging the cylinders and a fuel pump is provided with ports communicating to each cylinder respectively. A stationary **valve** plate is mounted against one face of the core so as to communicate fuel and air to the cylinders at the proper time during rotation of the rotor. An air pump is provided to supply fuel under pressure to a metering **valve** in the **valve** plate. Ignition is accomplished through compression with the cam being shaped so that the compression is increased suddenly through the range of combustion. The shape of the cam is such that it is possible to inject the fuel as well as the air, at the expanded position of the piston. The piston is then suddenly compressed through the firing range. Preferably, the cam is shaped to provide a slight dwell at the area of maximum compression to provide ample time for the explosion of the fuel and air mixture. The cylinders are exhausted by means of openings extending around a portion of the cylinder which are in communication with the exhaust manifold at the extreme expanded position of the pistons. The exhaust from each cylinder is exhausted through its individual exhaust openings rather than through a common exhaust port. The design of the **valve** plate and seal plate of the engine is unique and insures that the air and fuel will be properly injected at the proper time without creating objectionable pressures on the **valve** plate and seal plate thereby eliminating leakage and reducing damage to the components. The preferred embodiment includes an even number of cylinders, ordinarily two or four, with a cam plate having a pair of oppositely disposed lobes. The preferred cam plate includes upsweep portions on either side of the lobes to achieve more rapid compression and more rapid exhaust. Pressure sensing or heat sensing means are provided for at least one of the cylinders so that the timing of ignition of the fuel in the cylinder can be carefully controlled under varying atmospheric conditions.

Probable Assignee: TOWNSEND ENGINEERING CO

Earliest Publication Date: 19740709

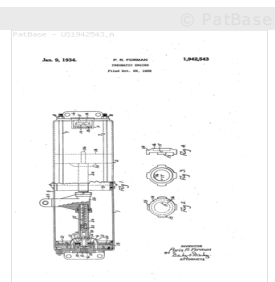
18) Family number: 19530894 (US1942543A)

PNEUMATIC ENGINE

Abstract: Source: US1942543A 1. A pneumatic engine comprising a cylinder having closed ends shaped to form inwardly projecting cups and opening outwardly of the cylinder, ported plugs in said cups to form **valve** chambers, slidable **valves** in said chambers each having an annular ridge on its inner face, a restricted port therethrough opening within the area of the ridge and constructed to permit free passage of air thereby, a seat in each chamber to be engaged by the ridge of the **valve** therein, a pair of connected pistons in said cylinder and spring pressed rods slidably mounted on the pistons and arranged to engage said **valves** to alternately hold them unseated during a portion of the stroke of the piston.

Probable Assignee: NAT PNEUMATIC CO

Earliest Publication Date: 19340109



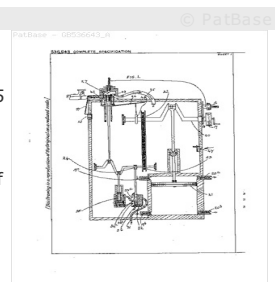
19) Family number: 20459914 (GB536643A)

AN IMPROVED METHOD OF OPERATING INTERNAL-COMBUSTION ENGINES

Abstract: Source: GB536643A 30034. [Class 110 (iii)] An internal-combustion engine 27 and a **vacuum engine** 35 are connected to a common crank shaft x which, through a chain 22, drives a power transmission shaft 40. The shaft 40 actuates an exhausting pump 21. The engine 27 exhausts through a pipe 25 into an air tight tank from which the products are exhausted by the pump 21 the gases entering past a ball-**valve** 19a and being discharged past a **valve** 20a. The **vacuum engine** is placed periodically by a slide **valve** in communication with the interior of the tank and with the atmosphere.

Probable Assignee: DAVID ROWLAND DAVIES

Earliest Publication Date: 19410522



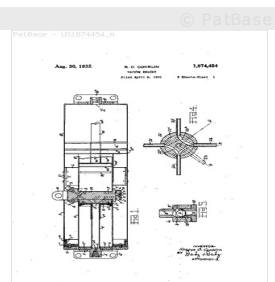
20) Family number: 20784879 (US1874454A)

VACUUM ENGINE

Abstract: Source: GB386830A 386,830. Cylinders. NATIONAL PNEUMATIC CO., 420, Lexington Avenue, New York, U.S.A. March 31, 1932, No. 9291. Convention date, April 9, 1931. [Class 122 (i).] A pneumatic door-operating unit has two pistons working conjointly in one cylinder and a device for cushioning the movement at the ends of either stroke. The cylinder A, B contains two pistons T, U connected by the hollow piston-rods O, P. These form the cylinders of pistons G, R, having hollow rods V, W. When the port K is open to suction and the opposite end port open to pressure the pistons T, U with the door - operating member N move to the left. Atmospheric air entering the port 5 <1> past the ball **valve** 9 similarly moves piston G to the left until the rod V engages the cylinder end when the air contained in the cylinder O to the right of the piston will be trapped, only escaping slowly through the restricted port 7, thus cushioning the stroke. Rings Ta, Vc of absorbent material are provided to retain lubricating oil which is introduced into the cylinders through the ports closed by plugs 3, 4.

Probable Assignee: NAT PNEUMATIC CO

Earliest Publication Date: 19320830



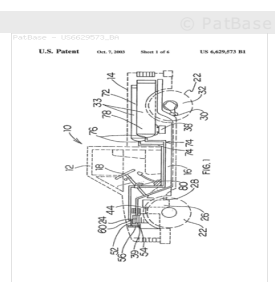
21) Family number: 29170145 (US6629573B)

AIR POWERED VEHICLE AND POWER PLANT FOR THE SAME

Abstract: Source: US6629573B A new and improved air powered vehicle and power plant therefore which include an engine having an engine block and at least one cylinder therein. A piston is mounted for reciprocation within the cylinder and the cylinder is provided with an air inlet **valve**, and exhaust **valve** and an intake **valve**. The piston within the cylinder is connected to a crank shaft. The **valves** are also operatively connected to the crank shaft whereupon the **valves** are opened and closed in sequence as the crank shaft rotates whereby time blasts of air may be introduced into the cylinder through said air intake **valve** and air may be exhausted through the exhaust **valve** to rotate the crank shaft.

Probable Assignee: PERRY ROBERT L

Earliest Publication Date: 20031007

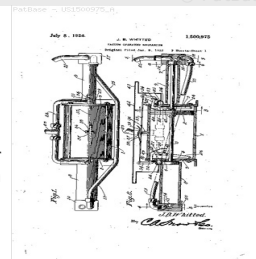


VACUUM-OPERATED MECHANISM

Abstract: Source: GB198219A 198,219. Whitted, J. B. June 8, 1922. Beat or lift **valves** spring gears operated in both directions - Comprises special arrangements of **valves** and **valve**-operating means in a multi-stage, air pump of the type having a piston in a power cylinder operated by a **vacuum engine**, and transmitting the movement to high and lowpressure cylinders for compressing the air, the piston operating the **valves** upon completion of its stroke in either directions. In the illustrated form, during the stroke of the hollow piston-rod 44 towards the right, air is drawn into the low pressure cylinder 6. On the return stroke, the air passes into the high-pressure cylinder 16. On the third stroke it is expelled. The **vacuum engine** for reciprocating the piston-rod comprises a cylinder 4 in which works a piston 54 secured to the rod. Ports 23, 25 in the cylinder heads communicate with a common conduit outside the cylinder which leads to a source of suction such as the intake of an internal-combustion engine. When the piston 54 reaches the left hand end of its stroke it compresses a spring 55 and moves a stirrup-shaped, pivoted, **valve**-carrying rod 31 to close the port 23 and open a port 32 to the atmosphere. This movement is communicated by a rod 40, arranged in a hood outside the cylinder and controlled by a spring 42, to a similar **valve**-carrying rod at the opposite end of the cylinder, whereby the atmospheric port 30 is closed and the suction port 25 opened. The suction then draws the piston to the right-hand end of the cylinder, the space on the left-hand side of the piston being filled with air admitted through the port 32. At the end of this stroke the **valve** mechanism is again reversed. The combined action of the springs 55 and the spring 42 give a quick **valve** movement at the ends of the stroke.

Probable Assignee: HENRY MILLER J

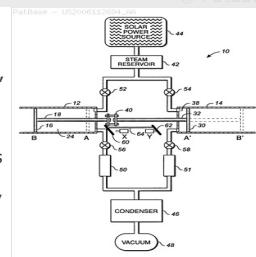
Earliest Publication Date: 19230508

**TWO STROKE STEAM-TO-VACUUM ENGINE**

Abstract: Source: US2006112694A A two stroke steam-to-**vacuum engine** comprises a plurality of cylinders (500, 502) each cylinder having a piston (504, 510), a piston rod (506, 512), and a steam chamber (508, 514), the piston rods connected for synchronous movement such that each piston is reciprocally moveable between an expanded position and a collapsed position. Admission of steam at 3-5 p.s.i. above atmospheric pressure into the steam chambers (508, 514) is controlled by steam **valves** (522, 524) and exposure of the steam chambers to a vacuum is controlled by vacuum **valves** (548, 550). Steam is supplied to the steam chambers (24, 38) through a boiler 520, a solar power source, or an alternative fuel of choice. An auxiliary vacuum tank (572) may be isolated from a primary vacuum tank (554) to replenish the vacuum in a condensate collector tank (560) after removal of condensate. Auxiliary vacuum pumps (614, 616), driven by power from cylinders (500, 502), replenish the vacuum in the auxiliary vacuum tank (572) leaving the main vacuum pump (570) to support the primary vacuum tank (554).

Probable Assignee: BISHOP LLOYD E

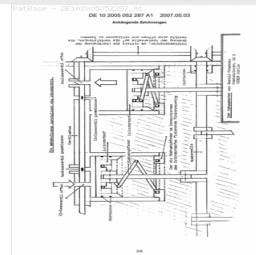
Earliest Publication Date: 20051004

**VACUUM ENGINE IN WHICH INFILTRATION OF ATMOSPHERIC AIR PRESSURE, WHICH PUSHES EXISTING CYLINDER INTO PATHS, IS REGULATED IN HERMETIC AREA OF VACUUM ENGINE BY MEANS OF VALVE RODS**

Abstract: Source: DE102005052287A1 **Vacuum engine**, which works as two components of force by means of vacuum and thrust of the atmospheric air pressure. The infiltration of the atmospheric air pressure, which pushes the existing cylinder into the paths, is regulated in the hermetic area of the **vacuum engine** by means of the **valve** rods.

Probable Assignee: PROCHNOW GERALD

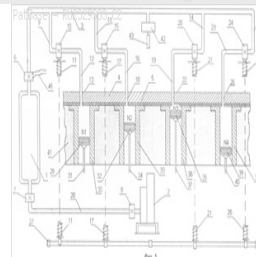
Earliest Publication Date: 20070503

**METHOD OF VACUUM ENGINE OPERATION AND VACUUM ENGINE**

Abstract: Source: RU2329383C FIELD: engines and pumps. SUBSTANCE: method is designed to create rarefaction in working chambers by communicating them with the vacuum chamber for moving pistons to TDC and to feed air into the said chambers to move pistons to BDC. Every cylinder block cover incorporates spring-loaded **valve** with a stem one end of which faces the piston to press onto the piston rod to the piston to TDC. Here, the working chambers communicate with atmosphere to move the piston for air to be forced in to force the piston to its BDC. The engine incorporates a compressor and a camshaft with cams and followers, the pistons being connected with the crankshaft by connecting rods. The cylinder block cover have holes, i.e. one for the working chamber to communicate with the vacuum chamber via a branch pipe with a **valve**, the branch pipe being coupled with the crankshaft via the follower, and the second hole to feed air into the working chamber. Every spring-loaded **valve** has a body and a stem furnished with a stop and a spring to interact with the cylinder. EFFECT: engine output adjustment. 2 cl, 3 dwg

Probable Assignee: BEKMAGAMBETOV MURAT MAKHMETOVI

Earliest Publication Date: 20070310

**REACTION MECHANISM FOR BRAKE BOOSTER**

Abstract: Source: US4672883A A reaction mechanism for use in a vacuum brake booster (10). A lever (86) transfers a reaction force from a first plunger (64) into a second plunger (110) to provide an operator with an indication of the output force being produced in response to an input force. A resilient member (118) urges a first connecting member (116) into engagement with the lever (86). When a predetermined input force is applied, the reaction force overcomes the resilient member (118) and thereafter allows the input force to be directly transmitted through a second connecting member (122) and added to the output force.

Probable Assignee: ALLIED SIGNAL INC

GAS ENERGIZED ENGINE SYSTEM

Earliest Publication Date: 19830920**Earliest Publication Date:** 19490731[illegible]

Earliest Publication Date: 20080304

PatBase - DEICOM

DE 10 2007 025 425 A1 2009-07-16

Antrag der Erfindung ist gegenstandslos

Das Vorstandsmitglied der Erfindung ist gegenstandslos

PatBase

Earliest Publication Date: 20090716

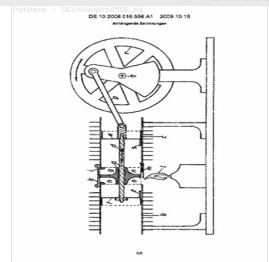
31) Family number: 43827125 (DE102008016556B4)

VAKUUMMOTOR

Abstract: The motor has a two-way suction **valve** (m) mounted between two successively coupled pistons (e, f), so that the **valve** is switched by proper motion of the pistons. A center piece (a) is slid into and hard-soldered with two cylinder barrels (b, c). A piston rod (d) is passed through a hole in the center piece, in an air-tight manner. The piston rod connects the pistons with each other. Air outlets (g, h) are drilled in the center piece and closed by spring-loaded **valves** (i, k). A connecting rod (p) connects the piston (e) with a shaft (q).

Probable Assignee: FALKENBERG HARALD

Earliest Publication Date: 20091015



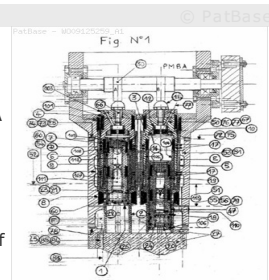
32) Family number: 43839338 (WO09125259A1)

HYBRID ENGINE UNDER THE EFFECT OF A VACUUM, HYDRAULIC, STEAM, GAS OR AIR PUMP ALONE OR WITH PERMANENT MAGNETS

Abstract: Engine process of which the distinguishing feature is based on the principle of thermodynamics (Figures A 1.1/19 to 6.6/19), using vacuum to draw the pistons, towards TDC and BDC, alternatively with twinned and complementary neodymium iron boron or samarium cobalt magnets to rotate said engine (these magnets do not lose their power during a person's lifetime). The magnets, which are positioned on the bores of the liners and opposed to the magnetic flux of the magnets positioned on the piston, must be twice the length of the piston magnets to allow a thrust with a maximum efficiency. The hybrid engine adapted to all types of fuels is described from Figures A 7.7/19 to 16.16/19. Figure A 7.7/19 depicts the technology of a hybrid piston used under the effect of vacuum in a four-cylinder engine following the principle of ignitions 1, 3, 4 and 2, that is to say that all the pistons are explosively actuated over two revolutions of the crankshaft.

Probable Assignee: STRZYZEWSKI PATRICK MARCEL

Earliest Publication Date: 20091015



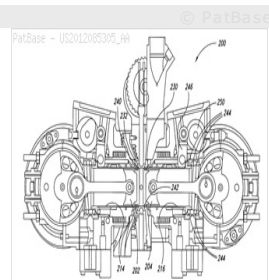
33) Family number: 50912326 (US2012085305A)

POSITIVE CONTROL (DESMODROMIC) **VALVE** SYSTEMS FOR INTERNAL COMBUSTION ENGINES

Abstract: Source: US2012085305A Various types of **valve** systems are disclosed herein. In one embodiment, a positive control reciprocating sleeve **valve** system for use with an internal combustion engine includes opening and closing rockers controlled by corresponding opening and closing cam lobes. In one aspect of this embodiment, interference can be designed into the **valve** control system to provide additional "hold-closed" force to hold the **valve** against its seat during a portion of the engine cycle. In another aspect of this embodiment, positive control **valve** systems can include compliant components and systems, hydraulic systems, pneumatic systems, and/or mechanical spring systems to control **valve** lash, facilitate sealing, etc.

Probable Assignee: PINNACLE ENGINES INC

Earliest Publication Date: 20120412



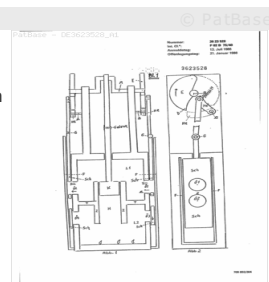
34) Family number: 6348983 (DE3623528A1)

ENGINE WITH VACUUM

Abstract: Source: DE3623528A1 In this "**engine** with **vacuum**" the oxygen is removed from the air by combustion in a closed chamber. The piston in a cylinder is forced into this vacuum by the normal air pressure. This occurs twice in one revolution since the cylinder lies between two closed chambers and is open at both ends. There is no compression, hence quiet running. Especially suitable for mopeds. Light construction, alternative fuels. The air slipstream is also blown through the combustion or air chamber. Double power action for one revolution.

Probable Assignee: ULRICH JAKOB DR

Earliest Publication Date: 19880121



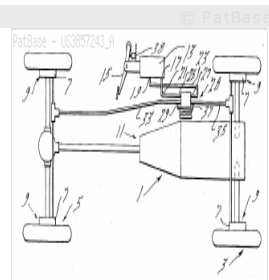
35) Family number: 1115619 (US3857243A)

HYDRAULIC BRAKE BOOSTER AND SYSTEM

Abstract: Source: US3857243A Booster system for hydraulic brake system including pumping pistons for boosting the fluid pressure applied by a master cylinder, and control **valves** for preventing the pressure from being boosted beyond a predetermined point.

Probable Assignee: CHRYSLER CORP

Earliest Publication Date: 19741231



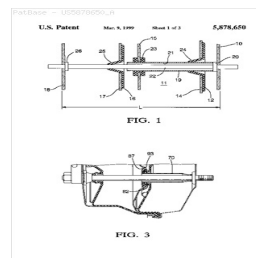
36) Family number: 11477361 (US5878650A)

POWER BOOSTER SEALING MECHANISM

Abstract: Source: US5878650A A power booster includes a housing with a rear housing section and a front housing section defining an internal cavity. A housing wall separates the internal cavity into a first chamber and a second chamber with an opening formed in the housing wall, wherein it is desirable to extend a component through the opening. A tube has an end secured in the opening in the housing wall. The tube's end includes a radially directed wall extending from the end of the tube that extends to an axially extending wall positioned concentrically with the tube and terminating with an outwardly turned segment. The axially extending wall is positioned within the opening in the housing wall with a seal positioned between the axially extending wall and the housing wall wherein the distance between the front housing section and the rear housing section is minimized, by extending the component through the tube.

Probable Assignee: DELPHI TECHNOLOGIES INC

Earliest Publication Date: 19981125



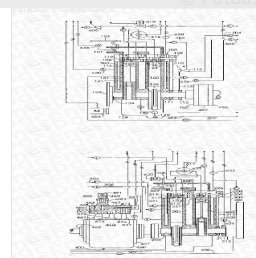
37) Family number: 11521508 (US5890365A)

INTERNAL COMBUSTION ENGINE CONSTANT SPEED VARIABLE VOLUME COUPLING AND OPERATION PROCESS

Abstract: Source: US5890365A A self-contained, hydraulically operated clutch-type coupling, allowing a minimum of two vehicular type internal combustion engines to be mounted in tandem replacing the standard single block, multi cylinder engine. Flexibility is provided to the driver by a computerized control system to select operation of one or more engines to produce minimum to maximum horsepower at the flywheel, necessary to meet specific road and traffic conditions while maintaining a constant engine (RPM) speed. In one embodiment, a single engine is started to minimize undesirable emissions due to the combination of cold start conditions and wall quenching and fuel conservation purposes. Upon attaining engine operating temperature uniformity, the succeeding engine(s) can be started and operated to provide maximum available horsepower/torque to meet road load conditions. A second embodiment includes primary engine standard throttle linkage providing an input signal to the computer controlling total engine (RPM) speed by means of a stepper motor driving the secondary engine throttle linkage after synchronization of the two or more engines is attained and monitored by crankshaft sensor and tachometer input to the computer.

Probable Assignee: SISTI LEONARD A

Earliest Publication Date: 19990406



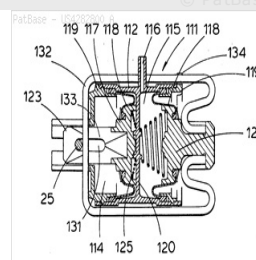
38) Family number: 1368455 (US4282800A)

FLUID PRESSURE ACTUATOR

Abstract: Source: US4282800A This invention relates to fluid pressure servo motors having two operatively independent fluid chambers, each chamber having a piston means therein movable in response to a fluid pressure differential so as to alter in use a two position device from one to the other of said two positions, each piston means having a lost motion means connection to allow the idle return of the piston in the event of cessation of the fluid pressure differential, wherein the two pistons are co-axial and move in opposite directions in response to the pressure differential and one piston is fixed to a stirrup formed as a wire loop which bridges the other piston to act in use against said device.

Probable Assignee: AUTOMOTIVE PROD CO LTD

Earliest Publication Date: 19800417



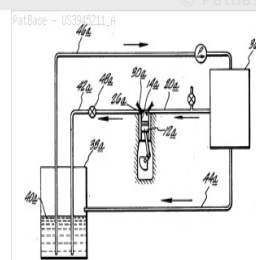
39) Family number: 1517506 (US3945211A)

VACUUM ENGINE

Abstract: Source: US3945211A A system for generating power in a variable volume engine using a liquid solvent and a soluble gas. Power is generated by decreasing the pressure within one or more variable volume chambers through the solution of ammonia in water when each chamber is at or near a maximum volume. The resulting differential between the atmospheric pressure and the reduced pressure within the chamber is used to generate mechanical power. The combining of the water and ammonia gas may take place within a conventional cylinder at a point in time when the associated piston is approximately bottom dead center. In a second embodiment, the ammonia and water is mixed in a tank at a remote location from the piston and cylinder. The cylinder is operatively connected with the tank such that the vacuum developed in the tank may be employed within the cylinder for the production of power.

Probable Assignee: ROWE B

Earliest Publication Date: 19751113



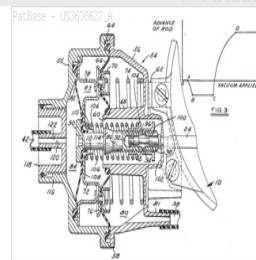
40) Family number: 15372302 (US3638627A)

VARIABLE ADVANCE ENGINE IGNITION TIMING CONTROL

Abstract: Source: US3638627A A dual diaphragm servo has one diaphragm operatively connected to the engine distributor advance plate and operatively interconnected with the other, the two diaphragms being operatively controlled in their movements by vacuum from induction passage ports at opposite sides of the carburetor throttle valve, the vacuum to the diaphragms being selectively controlled as functions of changes in vehicle speed and for engine or ambient operating temperatures, to modulate the timing advance in a variable manner with changes in vacuum level.

Probable Assignee: FORD MOTOR CO

Earliest Publication Date: 19710916



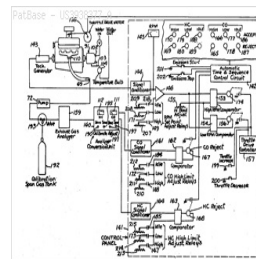
41) Family number: 19101973 (US3938377A)

METHOD AND APPARATUS FOR PRODUCTION HOT TESTING OF ENGINES UNDER LOAD

Abstract: Source: US3938377A A method and apparatus for hot testing on a production basis, automobile engines as they come off the assembly line for performing a final check on such engines before they are installed in the automobile. The engines are tested for exhaust emissions at three points or KEY MODES of operation at which emission related engine malfunctions are most likely to appear. These points of operation are high cruise, low cruise, and idle. The engine, after it comes off the assembly line is placed in a production test stand wherein the connections for water, oil and exhaust are made, the engine is started, accelerated to the high cruise speed, and allowed to warm up for a predetermined time, after which time, measurements of hydrocarbons and carbon monoxide are taken and an appropriate indicator light lit to indicate that the engine either is within limits at this speed, or does not pass for some reason. The same procedure is followed in the low cruise and idle speeds. If one or more of the indicator lights show a reject condition, the engine is automatically removed from the production test stand and routed to a repair shop for further testing.

Probable Assignee: CLAYTON MANUFACTURING CO

Earliest Publication Date: 19750416



42) Family number: 20161977 (DE523610A)

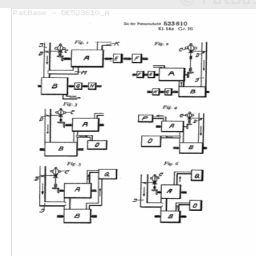
HILFSTURBINENSCHALTUNG FUER MIT KONDENSATION ARBEITENDE TURBINENLOKOMOTIVEN AUXILIARY TURBINE CIRCUIT FOR WITH CONDENSATION TURBINE OPERATING LOCOMOTIVES (MACHINE TRANSLATION)

Abstract: Source: DE523610A (Claim 1) 1. l: '17 '1, N7'aNSI'RUECHI: i. Hilfsturbinenschaltung fuer mit Kondensation arbeitende Turbinenlokomotiven, dadurch gekennzeichnet, dass der Dampf fuer mindestens eine Hilfsturbine, welche Arbeitsmaschinen antreibt, die mit ver aenderlicher Drehzahl laufen duerfen, hinter dem Regelungsglied einer auf gleichbleibende Drehzahl geregelten weiteren Hilfs turbine entnommen wird.

Machine translation: (claim 1) 1 l: '17 '1, condensation N7'aNSI'RUECHI: i APU circuit for with Kon-working turbine locomotives, characterized in that the steam for at least one auxiliary turbine which machinery drives, allowed to run with various aenderlicher speed, beyond the control element a lead-regulated at the same speed Bende other auxiliary turbine is taken.

Probable Assignee: ERICH BURMEISTER

Earliest Publication Date: 19310425



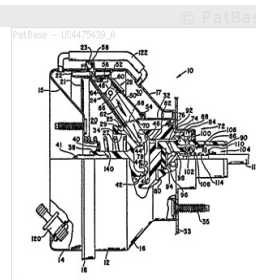
43) Family number: 2112999 (US4475439A)

TANDEM BRAKE BOOSTER

Abstract: Source: US4475439A A tandem brake booster (10) having first (24) and second (28) walls that move in opposite directions within a cavity to produce an output force. A lever arrangement (48) attached to the second (28) wall engages a fulcrum (70) to transfer a force produced by movement of the second wall (28) into the first (24) wall. A control mechanism (72) has a cylindrical body (74) with an annular surface (78) that engages the lever arrangement (48). The movement of the cylindrical body (74) as compared to the output member (41) is a function of the ratio of the distance from the fulcrum (70) to end (46) and from the fulcrum (70) to the annular surface (78), and as such, maximum output travel can be achieved without requiring a corresponding input travel.

Probable Assignee: ALLIED CORP

Earliest Publication Date: 19841009



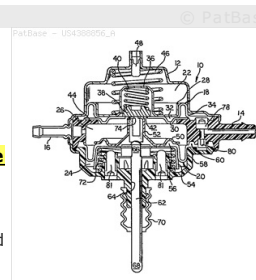
44) Family number: 2374500 (US438856A)

IDLE SPEED CONTROL ACTUATOR

Abstract: Source: US438856A An idle control **valve** (10) for adjusting the idle position of a vehicle throttle lever includes a housing (12) having a pair of diaphragm assemblies (18, 20) which divide the housing into three chambers (22, 24, 26). The chamber (26) defined between the diaphragm assemblies is communicated with atmospheric pressure, and the other chambers (22, 24) are communicated with **engine** manifold **vacuum**. A **valve** member (38) controls communication through a vent (74) in the diaphragm assembly (20) to position the latter as a function of the variations in **engine** manifold **vacuum** to thereby control the position of the plunger (62) which is attached to the diaphragm assembly (20). The diaphragm assemblies (18, 20) include projecting portions (36, 52) which telescope within one another when the vehicle engine is turned off and atmospheric pressure is communicated to all three chambers to permit the plunger to be withdrawn into the housing.

Probable Assignee: SIEMENS BENDIX AUTOMOTIVE ELECTRONICS LTD

Earliest Publication Date: 19820609



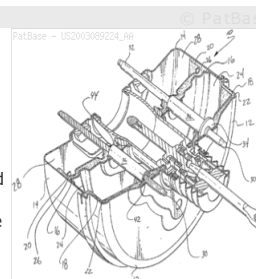
45) Family number: 28537883 (US2003089224A)

TANDEM VACUUM BOOSTER ASSEMBLY INCLUDING SLEEVE FOR AIR TRANSFER BETWEEN HIGH PRESSURE CHAMBERS

Abstract: Source: US2003089224A A tandem vacuum booster includes a rear housing mounted to the vehicle, and a front housing mounted to the rear housing to define an interior chamber. A divider, disposed between the housings, partitions the interior chamber into primary and secondary chambers. A primary diaphragm, disposed between the rear housing and the divider, partitions the primary chamber into a primary high pressure chamber and a vacuum chamber. A secondary diaphragm, disposed between the divider and the front housing, partitions the secondary chamber into a secondary high pressure chamber and a vacuum chamber. A tie rod extends between the housings and through the chambers. A sleeve is disposed about the tie rod and extends between the high pressure chambers and is spaced from the tie rod. This sleeve defines a passage between the tie rod and itself such that air can be transferred between the high pressure chambers.

Probable Assignee: BWI CO LTD SA

Earliest Publication Date: 20030515



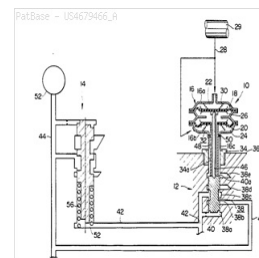
46) Family number: 29346887 (US4679466A)

LINE PRESSURE CONTROL DEVICE FOR HYDRAULIC CONTROL SYSTEM OF AUTOMATIC TRANSMISSION

Abstract: Source: US4679466A In a line pressure control device for a hydraulic control system of an automatic transmission, a vacuum diaphragm unit is constructed to apply upon a **valve** spool of a throttle **valve** or a regulator **valve** such a force that reduces with increasing intake manifold vacuum when the intake manifold vacuum is lower than a first predetermined value and such a force that increases with increasing intake manifold vacuum when the intake manifold vacuum is higher than a second predetermined value.

Probable Assignee: NISSAN MOTOR

Earliest Publication Date: 19860911



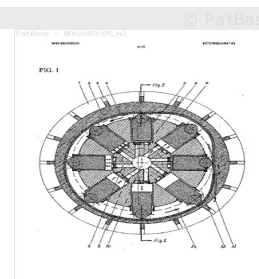
47) Family number: 29482884 (WO02093005A2)

WATER CIRCUIT MOTOR

Abstract: The invention relates to a water circuit motor which uses the reinjection force of water as an energy source, said force having been researched and proven around the world. The dynamic particles which can be produced successively in an unlimited manner are connected in circuit resonance in a plurality of ways, are reinforced with each other, and are collected to form a sustained resulting force. The re-cooled water is then ready again for a sudden expansion, for the reinjection. It is not necessary to re-use the water, but possible, which is highly significant for countries with water shortage. A solution which can be easily implemented is thus provided to solve the problem of the world's huge energy shortage. An even more important possibility provided by the invention is the self-healing of our nature, which has had to suffer, and is still suffering, an immeasurably huge amount of damage due to the production of energy using the combustion of material. The inventive motor can be used as a drive for land vehicles, watercrafts, and aircrafts, for building machines and for power stations.

Probable Assignee: JANOS SANDOR

Earliest Publication Date: 20010920



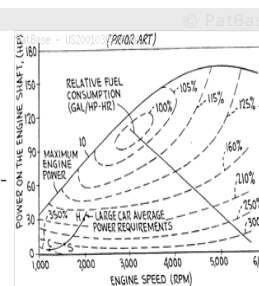
48) Family number: 30047954 (US2001039230A)

HYBRID VEHICLES

Abstract: Source: US2001039230A A hybrid vehicle comprises an internal combustion engine, a traction motor, a starter motor, and a battery bank, all controlled by a microprocessor in accordance with the vehicle's instantaneous torque demands so that the engine is run only under conditions of high efficiency, typically only when the load is at least equal to 30 percent of the engine's maximum torque output. In some embodiments, a turbocharger may be provided, activated only when the load exceeds the engine's maximum torque output for an extended period; a two-speed transmission may further be provided, to further broaden the vehicle's load range. A hybrid brake system provides regenerative braking, with mechanical braking available in the event the battery bank is fully charged, in emergencies, or at rest; a control mechanism is provided to control the brake system to provide linear brake feel under varying circumstances.

Probable Assignee: PAICE LLC

Earliest Publication Date: 20000323



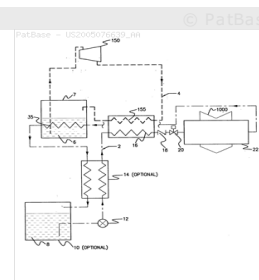
49) Family number: 31811382 (US2005076639A)

CRYOGENIC COGENERATION SYSTEM

Abstract: Source: US2005076639A A cryogenic and thermal source cogeneration method for converting energy from a heat source, through a cryogenic heat transfer process, into mechanical and/or electrical energy, comprising, utilizing a vapor compression cycle to absorb heat from the heat source and, utilizing a Rankine cycle for energy transfer, for converting thermal energy to mechanical and/or electrical energy. A cryogenic and thermal source cogeneration apparatus for converting energy from a heat source, through a cryogenic heat transfer process, into mechanical and/or electrical energy is also disclosed, comprising, vapor compression cycle mechanisms to absorb heat from the heat source, and Rankine cycle mechanisms for energy transfer, for converting thermal energy to mechanical and/or electrical energy. The Rankine cycle mechanisms being operably linked to the vapor compression cycle mechanisms.

Probable Assignee: BLOCK STEVEN

Earliest Publication Date: 20050414



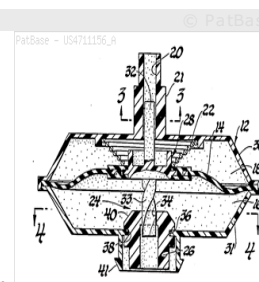
50) Family number: 3653881 (US4711156A)

ACTUATOR FOR CONVERTING LINEAR MOTION TO ROTARY MOTION AND VICE VERSA

Abstract: Source: US4711156A A linear to rotary actuator is disclosed having a fluid pressure operated diaphragm whose linear movement is translated into rotary movement of an output member by a helical coupling therebetween. The coupling comprises a coupling member that is insert molded in the diaphragm so as to extend therethrough and interlock therewith while preventing fluid from passing from one diaphragm side to the other. The coupling member has a combined guide and anti-rotation portion extending from one side of the diaphragm that slidably engages a stationary guide so as to guide linear movement while preventing rotational movement of the coupling member and further has a helix extending from the other side of the diaphragm which in one embodiment slidably engages in a slot directly in the output member whereby linear movement of the diaphragm forces linear non-rotational movement of the coupling member and thereby rotary movement of the output member. In another embodiment, the helix engages in a slot in a sector gear which meshes with a gear connected to the output member to turn same.

Probable Assignee: GEN MOTORS CORP

Earliest Publication Date: 19861210



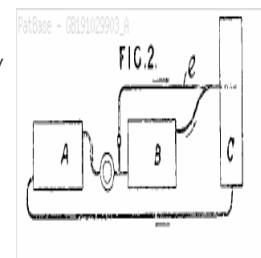
51) Family number: 36987761 (GB191029903A)

IMPROVEMENTS RELATING TO THE ARRANGEMENT AND WORKING OF CONDENSERS.

Abstract: Source: GB191029903A 29,903. Mueller, O. H. Dec. 23. Condenser systems.-Exhaust steam from separate engines, for example a turbine and a reciprocating engine, are condensed under the requisite different vacua in separate condensers A, B, through which circulating-water passes in series in order that the coolers C may deal with water of as high a temperature as possible, and may therefore work at its maximum efficiency. By-pass pipes e are provided to allow the amount of water supplied to each condenser to be regulated.

Probable Assignee: MUELLER OTTO HILDEBERT

Earliest Publication Date: 19111227



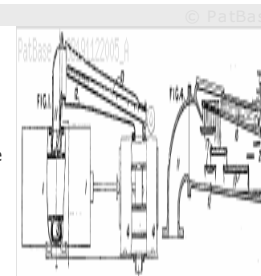
52) Family number: 37000988 (GB191122005A)

IMPROVEMENTS IN AND RELATING TO CONDENSERS FOR STEAM ENGINES.

Abstract: Source: GB191122005A 22,005. Eastwood, W. Oct. 6. Jet condensers condenser systems. - A condensing-plant for a steam-engine cylinder 1, Fig. 1, having a central exhaust belt 3, comprises an inclined passage 12 to which injection water is admitted and which communicates with the exhaust belt 3 at its upper end and with a wet - air pump 4 at its lower end. The condensing-water may be admitted by a perforated or slotted pipe 13, by a conduit 15, Fig. 4, perforated or slotted at its upper end so as to direct jets of water on to shelves or trays 17 arranged in the passage 12, or by a conduit perforated and fitted with tubes so as to fill the upper portion of the passage 12 with spray. A **valve** 21, Fig. 4, may be arranged to admit an additional supply of water when starting the engine. Air is extracted from the injection water before it enters the condenser by leading it through a chamber in direct connexion with the air-pump. A spring-backed piston is arranged in the wall of the passage 15 to operate an alarm or a mechanism for stopping the engine if the vacuum falls too low. When the level of the water supply is too low for the water to be lifted by the vacuum alone, a centrifugal pump is arranged to lift the water either throughout the working of the engine or at the starting of the engine only. The plant is applicable to either a vertical engine or an horizontal engine, as shown in Fig. 1 in the latter case, an elbow 11 is arranged to connect the exhaust belt 3 with the passage 12. The air-pumps described in Specifications 12,843/95, 25,635/97, [both in Class 122, Steam engines], or 9986/07 may be employed.

Probable Assignee: EASTWOOD WILLIAM

Earliest Publication Date: 19120829



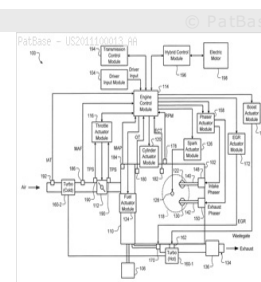
53) Family number: 48846005 (US2011100013A)

PUMPING LOSS REDUCTION SYSTEMS AND METHODS

Abstract: Source: US2011100013A An engine control system comprises a base air per cylinder (APC) module, a catalyst temperature adjustment module, an ambient temperature adjustment module, and an APC adjustment module. The base APC module determines a base APC to reduce first engine pumping losses during a first deceleration fuel cutoff (DFCO) event relative to second engine pumping losses during a second DFCO event. The catalyst temperature adjustment module determines a catalyst temperature adjustment based on a catalyst temperature during the first DFCO event. The ambient temperature adjustment module determines an ambient temperature adjustment based on an ambient air temperature during the first DFCO event. The APC adjustment module selectively adjusts the base APC based on the catalyst temperature adjustment and the ambient temperature adjustment and controls at least one of the engine airflow actuators based on the adjusted base APC during the first DFCO event.

Probable Assignee: GM GLOBAL TECHNOLOGY OPERATIONS LLC

Earliest Publication Date: 20110505



54) Family number: 49000189 (RU2009119773A)

VACUUM ENGINE (EN) (MACHINE TRANSLATION)

Abstract: Source: RU2009119773A 1. **Vacuum engine**, containing first and second converters of energy stocks which interact with converter reciprocating motion into rotary motion, which differs in that it contains additional capacity with aqueous solution of ammonia with a heater, water tank and condenser, communicating with the first and the second energy converters, which are made in the form of vacuum and working under the influence of atmospheric air pressure! 2. vacuum motor on p. 1, distinguished by the fact that each energy converter consists of interacting with lid, cylinder piston rod and an actuator nodes, gidroklapana, vent **valve** and close an actuator, with an actuator outputs directly and gidroklapana through channels in the lid, Rod and piston cavity interact with the working Chamber of the cylinder through the exhaust **valve**, which communicates with the condenser, in addition an actuator node interacts with the node it is closed through the rope! 3. vacuum motor on p. 2, featuring an actuator node that contains a spring-loaded **valve**, which interacts with the spring-loaded latch that through cable interacts with an actuator closing host.! 4. vacuum motor on p. 2, distinguished by the fact that the closure of the site pnevmokamery contains related kinematics thrust washer that moves in the cylinder, the second and third Springs, Rod, rack and lever associated cable with an actuator node! 5. vacuum motor on p. 2, featuring that site gidroklapana contains interact with each other in the fifth and sixth Springs, gidroporshen', podpruzhine

Probable Assignee: OF GEOTHERMAL PROBLEMS DAGESTAN SCIENTIFIC CENTER RUSSIAN ACADEMY OF SCIENCES INST

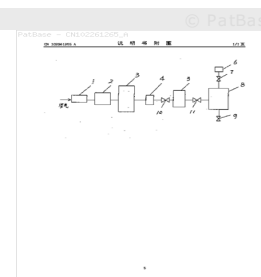
Earliest Publication Date: 20101127

55) Family number: 50022259 (CN102261265A)

ENGINE CAPABLE OF USING A VACUUM METHOD (MACHINE TRANSLATION)

Abstract: Source: CN102261265A An engine capable of using a vacuum method, the engine is no longer intended to use natural fuel. Protection of the environment so that human life more beautiful. The technical proposal is the engine exhaust outlet connector switch. Exchange connector reservoir, the reservoir stores a vacuum, when the vacuum **valve** is opened before the switch into the **engine vacuum**, sucking up the bottom of the piston, the engine exhaust **valve** closed, while the intake **valve** opens, the atmosphere but also the piston pressed into the bottom of the exhaust **valve** and open the piston to suck it up, so constantly repeated for power. The present invention is used for air engine, the internal combustion engine can also be used.

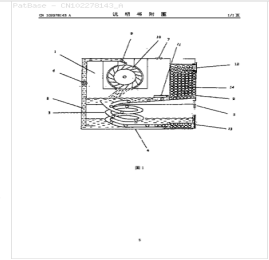
Earliest Publication Date: 20111130



VACUUM PRESSURE TURBO ENGINE (MACHINE TRANSLATION)

Abstract: Source: CN102278143A The present invention discloses a pneumatic turbine **vacuum engine**, the atmospheric pressure at the water body storage container to generate pressure water into the sprinkler piping, **valves**, water re-enters the nozzle in the vacuum vessel discharged impact and water gravity of this water body two forces to jointly promote turbo, running, acting. At the same balls in the container ball in from the controller so that the ball under the regulation of the water bodies within the snail-like shape along the pipeline tumble in the box by pulling water containers after removing the ball, then the ball was added steel circulates inside the ball container, can be cascaded into a unit, clean energy, alternative to fossil energy sources.

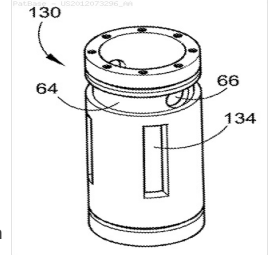
Earliest Publication Date: 20111214

**ROTARY CAM RADIAL STEAM ENGINE**

Abstract: Source: US2012073296A The present invention is directed to a Rotary Cam Radial Steam Engine of a single or multiple pistons and cylinders, which are driven lineally by the introduction of pressure from an external source, through a single, centralized rotating **valve**. The **valve** has been designed to provide timed introduction of the pressurized gasses into each cylinder at the moment determined to be best for the engine's applied use, and then the same central rotating **valve** assembly at the appropriate moment opens to allow the used pressure to exhaust it into the atmosphere, or a collection system. The lineal direction of the pistons is then directed outward and onto an external rotating cam which converts the lineal energy into circular rotating energy. The engine can be disassembled for servicing or complete rebuilding and reassembled quickly with use of no tools. With the need for efficient energy generation, there is a growing requirement for a lighter weight, long lasting, economical motors with affordable ease of maintenance to be used on different applications capable using a variety of different power generating sources.

Probable Assignee: COURSON MICHAEL W

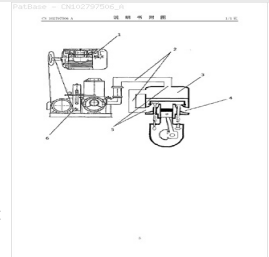
Earliest Publication Date: 20120329

**ATMOSPHERIC-PRESSURE VACUUM ENGINE**

Abstract: Source: CN102797506A The invention discloses an engine acted by using atmospheric pressure, which is characterized in that: the bottom of an air cylinder is sealed based on the existing engine, a piston is closely combined with the air cylinder, and a starter is connected with a flywheel; a space below the piston is permanently vacuum, an exhaust **valve** is connected with a vacuum chamber, and the vacuum chamber is connected with a small vacuum pump; before the engine is started, two **valves** are closed, a space above the piston is vacuum, and when the engine is started, one **valve** is opened and one **valve** is closed; the starter moves to the upward side, an inlet **valve** is opened, and then the piston moves downwards; when the piston moves to the downward side, the exhaust **valve** is opened, at the moment, the vacuum chamber is vacuum, the piston moves upwards, and air after entering the vacuum chamber is discharged by the vacuum pump, thereby forming a cycle; when the engine stops operating, the inlet **valve** is closed firstly, and then, after air in the cylinder is discharged, the exhaust **valve** is closed; and the small engine provides power for the vacuum pump and takes ethanol or gasoline as fuel, therefore, the fuel application is less, and the operation of the engine is controlled by the fuel. By using the engine, the effects of energy saving and pollution reduction are achieved, therefore, the engine has a great development prospect.

Probable Assignee: YIXUAN ZHAO

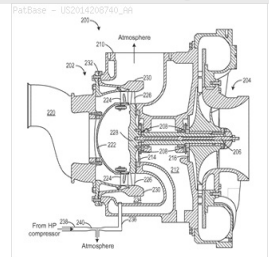
Earliest Publication Date: 20121128

**TURBOCHARGER, SYSTEM, AND METHOD FOR DRAINING FLUID FROM A TURBOCHARGER**

Abstract: Source: US2014208740A Various methods and systems are provided for removing fluid from a turbocharger turbine. In one example, a turbocharger comprises a turbine including a casing housing a rotor, a drain passage coupled to the casing, and an air jet coupled to the drain passage, the air jet supplying intake air from a high-pressure compressor outlet to the drain passage.

Probable Assignee: GENERAL ELECTRIC CO

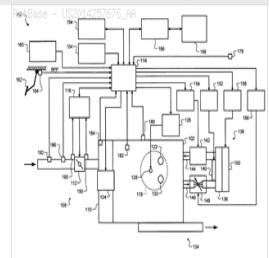
Earliest Publication Date: 20140731

**SYSTEM AND METHOD FOR CONTROLLING A COOLING SYSTEM OF AN ENGINE EQUIPPED WITH A START-STOP SYSTEM**

Abstract: Source: US2014257676A A system according to the principles of the present disclosure includes a start-stop module, a pre-ignition risk module, and a cooling control module. The start-stop module stops and restarts an engine independent from an input received from an ignition system. The pre-ignition risk module monitors a risk of pre-ignition when the engine is restarted and generates a signal based on the risk of pre-ignition. The cooling control module controls a cooling system to circulate coolant through the engine when the engine is stopped in response to the risk of pre-ignition.

Probable Assignee: GM GLOBAL TECHNOLOGY OPERATIONS LLC

Earliest Publication Date: 20140910



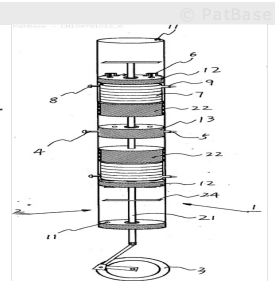
61) Family number: 59905655 (CN104791012A)

VACUUM ENGINE

Abstract: Source: CN104791012A The invention relates to a **vacuum engine**. The **vacuum engine** comprises a hollow rod, a movable assembly and a pressure regulating assembly. According to the **vacuum engine**, only an air exhaust part and an air **valve** are used for driving a piston in the hollow rod to move, only the piston fixed to the same piston connecting rod is arranged in the hollow rod, the pressure regulating assembly is used for being matched with the moving mode of the piston in the hollow rod, therefore, the engine is quite simple in structure and low in manufacturing cost, no fuel needs to be combusted, and the problem of environmental pollution can be effectively solved.

Probable Assignee: FENG GUIHUA

Earliest Publication Date: 20150722



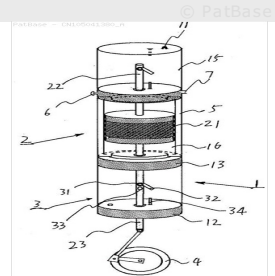
62) Family number: 60761028 (CN105041380A)

VACUUM ENGINE

Abstract: Source: CN105041380A The invention relates to a **vacuum engine** which comprises a cylinder body, a moving assembly and a pressure regulation assembly. The engine controls a piston to do reciprocating motion through passive **valves**; when one passive **valve** is opened, vacuum is formed between one end face of the piston and the end face of the opened passive **valve**, so that the other end face of the piston is driven by the air pressure to move; after the piston moves to a set position, the passive **valve** is automatically closed, and after another passive **valve** is opened, the piston moves in another direction. Accordingly, the engine is low in manufacturing cost, does not need to burn any kind of fuel and can effectively solve the environment pollution problem.

Probable Assignee: FENG GUIHUA

Earliest Publication Date: 20151111



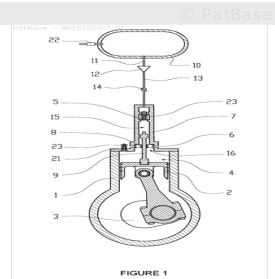
63) Family number: 63719237 (WO16159907A1)

COMPRESSED GAS ENGINE

Abstract: The present invention is an engine operated by compressed gas, wherein it mainly comprises pistons (2) moving back and forth inside the cylinders (1); a crank shaft (3) rotated by said pistons (2); a cylinder cover (7) which is located on the cylinders (1) and provided therein with compressed gas **valves** (5) transferring gas to the cylinder (1), and with exhaust holes (6) discharging unused gas out of the cylinder (1); actuating pins (9) which are secured in the upper portion of the piston (2) and which allows the **valves** (5) to open and exhaust holes (6) to close upon movement of the piston (2) towards the upper point (24), while allowing the **valves** (5) to close and the exhaust holes (6) to open upon the movement of the piston (2) towards the lower point (25); exhaust rings (8) that open/close the exhaust holes (6) with the back and forth movement of the actuating pins (9); compressed gas tank (10) that supplies compressed gas to the engine; high pressure pipe (11) and low pressure pipe (13) which together enable transferring the compressed gas from the tank (10) to the cylinder (1); pressure reducer (12) lowering the pressure of the gas during the transfer thereof; and a regulating **valve** (14) which regulates the amount of gas during the transfer thereof and allows the engine to rotate at the desired revolution.

Probable Assignee: OZDEMIR BERTAN

Earliest Publication Date: 20161006



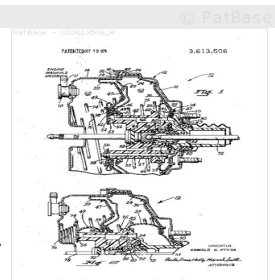
64) Family number: 669520 (US3613506A)

SERVOMOTOR HAVING IMPROVED NO-POWER OPERATION

Abstract: Source: US3613506A A servomotor having first and second diaphragm members joined together to form a movable wall. The first diaphragm member is attached to the periphery of the housing of the servomotor and the second diaphragm member is retained by a hub member. The hub member contains a control **valve** for selectively communicating fluid pressure to one side of the first and second diaphragm members while vacuum is present on the other side in response to an input. When this pressure differential is sufficient to overcome a resilient force acting on the first diaphragm member, a corresponding force is transmitted to the hub member. If the pressure differential is insufficient to overcome the resilient force, the second diaphragm member will expand as the hub member is moved by an input to pressurize a master cylinder while the first diaphragm member remains stationary.

Probable Assignee: BENDIX CORP

Earliest Publication Date: 19710409



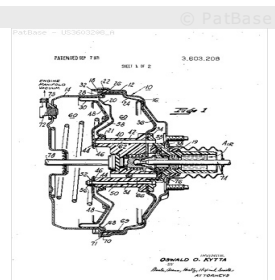
65) Family number: 669759 (US3603208A)

SERVOMOTOR HAVING A ONE-PIECE CENTER PLATE

Abstract: Source: US3603208A A partition member for dividing a servomotor into a pair of opposing fluid pressure chambers. A first movable wall having a thickened end adjacent a front shell is fixed to the front end of a hub. A second movable wall having a thickened end which abuts the front shell is fixed to the rear of the hub. The partition member surrounds the hub and compresses the thickened ends of said first and second movable walls into sealing engagement with the front and a rear shell, respectively. A **valve** member responsive to an operator closes a passage within the hub to create a pressure differential across the first and second movable wall to provide a force to operate a power braking system.

Probable Assignee: BENDIX CORP

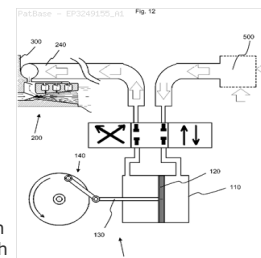
Earliest Publication Date: 19710409



66) Family number: 67651754 (EP3249155A1)

VORRICHTUNG ZUM BETAETIGEN EINES LUFTMOTORS DEVICE FOR ACTUATING AN AIR MOTOR

Abstract: Source: EP3249155A1 L'invention concerne un dispositif muni d'une source de vide pour actionner un moteur (100), lequel moteur est constitue d'un cylindre (110) a l'interieur duquel se deplace un piston (120) separant le cylindre en deux chambres (111, 112) dont le volume varie en fonction du deplacement du piston dans le cylindre, le piston etant muni d'une tige (130) saillant du cylindre a l'extremite de l'une des deux chambres, chaque chambre etant munie d'au moins une soupape d'admission et d'au moins une soupape d'echappement, un distributeur etant prevu pour raccorder alternativement les chambres (111, 112) a une source de vide via leurs soupapes d'echappement et a la pression atmosferique via leurs soupapes d'admission. Conformement a l'invention, la source de vide comprend au moins une prise de vide placee dans un dispositif a effet Venturi (200). The invention relates to a device equipped with a vacuum source to actuate a motor (100), which is comprised of a cylinder engine (110) within which moves a piston (120) separating the cylinder in two chambers (111, 112), the volume of which varies as a function of the displacement of the piston in the cylinder, the piston being provided with a stem (130) protruding from the cylinder at the end of one of the two chambers, each chamber being provided with at least one inlet **valve** and at least one exhaust **valve**, nozzle being provided to connect alternatively rooms (111, 112) to a source of vacuum via their exhaust **valves** and at atmospheric pressure, via their intake **valves**. In accordance with the invention, the vacuum source comprises at least one jack of vacuum placed in a device a Venturi effect (200).



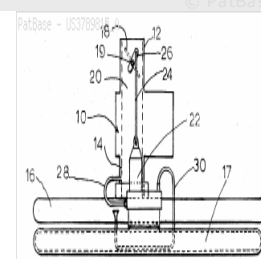
Probable Assignee: BENKENDIL MOHAMED

Earliest Publication Date: 20171129

67) Family number: 7628078 (US3789815A)

TEMPERATURE RESPONSIVE CONTROL DEVICE

Abstract: Source: US3789815A A device for controlling the movement of a control member between first and second positions in accordance with a varying temperature condition and a power condition generated by a temperature-power source. The device includes means responsive to the varying temperature condition and the power condition for driving the control member between the first and second positions so that (1) the control member is driven to the first position when no power condition is generated and the temperature condition is below a prescribed level, (2) the control member is driven toward the second position as a function of the temperature condition when the power condition is generated, and (3) the control member is driven to a prescribed intermediate position between the first and second positions when the temperature condition is at or above the prescribed level and the power condition is terminated.



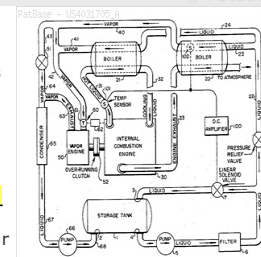
Probable Assignee: CARTER C

Earliest Publication Date: 19740205

68) Family number: 8103461 (US4031705A)

AUXILIARY POWER SYSTEM AND APPARATUS

Abstract: Source: US4031705A An auxiliary power system for an internal combustion engine. The system employs a vapor or hot gas engine coupled to an internal combustion engine by means of an overrunning clutch assembly. The internal combustion engine, operated conventionally, generates heat in its cooling and exhaust systems as well as in accessory equipment. The heat generated in the internal combustion engine and its accessories is used for generating vapor in one or more heat exchangers, the vapor preferably being from a liquid with a boiling point well below that of water. The generated vapor is used to drive a vapor engine. Temperature-sensitive means is employed to measure the heat generated in one or more parts of the system for controlling a linear solenoid **valve** for automatically controlling the internal combustion engine temperatures and thereby the amount of vapor generated. A vacuum-controlled throttle **valve** is also employed in conjunction with the solenoid-operated **valve** for automatically controlling the input of vapor to the vapor engine for controlling its idle speed and for providing maximum acceleration as needed. Safety **valve** means and vapor condensing means are provided at the output of the heat exchangers and steam engine to condense the generated vapor for recirculation in the system.



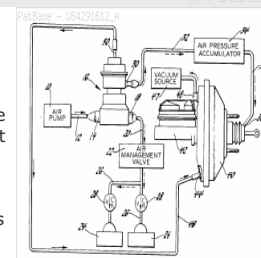
Probable Assignee: BERG JOHN

Earliest Publication Date: 19760517

69) Family number: 8372793 (US4291612A)

POWER BRAKE SYSTEM DIFFERENTIAL AIR PRESSURE CONTROL **VALVE** ASSEMBLY

Abstract: Source: US4291612A A power brake system has a brake booster operable by differential air pressure provided by a source of vacuum and a source of compressed air pressure. The differential air pressure control **valve** assembly of the invention maintains a substantially constant available differential of air pressure between the vacuum and compressed air pressures available to the brake booster for booster operation. In the charging mode it directs air pressure from an air pressure pump to an accumulator connected to the pressure inlet side of the booster, charging until the desired pressure differential is attained. In the storage mode, the air pressure from the pump is permitted to flow in its usual manner to another device or circuit utilizing the air pressure. This may be, for example, a part of the vehicle engine emission control system. In the pressure relief mode, the control **valve** vents excess accumulated pressure to exhaust.



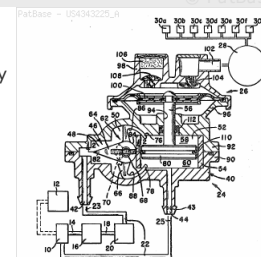
Probable Assignee: GEN MOTORS CORP

Earliest Publication Date: 19810929

70) Family number: 8603144 (US4343225A)

FLUID ACTUATOR

Abstract: Source: US4343225A A fluid actuator housing (40) supports an output member 56 and a **valve** assembly (62). The **valve** assembly controls fluid communication to a pair of chambers (58, 60) to reciprocate the output member within the housing. The first part (64) of the **valve** assembly directs fluid communication to the chambers and the second part (66) is engageable with the output member to control movement of the first part.



Probable Assignee: BENDIX CORP

Earliest Publication Date: 19820810

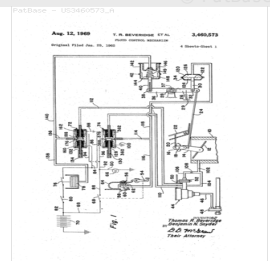
FLUID CONTROL MECHANISM

Abstract: Source: US3460573A ABSTRACT OF THE DISCLOSURE

A magnetically operated control **valve** assembly in a 15 fluid control mechanism has a **valve** controlling two inlets and an outlet in an alternative manner, magnetically energizable **valve** actuating and holding mechanism, permanent magnet means associated with the **valve**, and means selectively energizing various elements of the **valve** 20 actuating and holding mechanism to condition the **valve** assembly as desired. This application is a division of Ser. No. 429,100 filed 25 Jan. 29, 1965, now Patent No. 3,339,664. and entitled, Control Mechanism.

Probable Assignee: GEN MOTORS CORP

Earliest Publication Date: 19690812



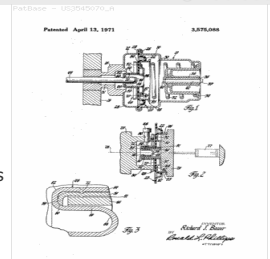
METHOD OF ASSEMBLING A VACUUM MODULATOR

Abstract: Source: US3545070A ABSTRACT OF THE DISCLOSURE

A vacuum modulator for an automotive automatic transmission control system is shown as having a subassembly including a diaphragm separating an atmospheric chamber from a vacuum chamber to which **engine vacuum** is applied for automatic transmission control purposes. Two stiff members sandwich the diaphragm in the subassembly, the member on the **engine vacuum** side serving as a seat for a spring providing the modulator's spring bias. The other member is on the atmospheric pressure side and has a socket receiving a control rod which is for transmitting the modulator's output force to a modulator **valve** in the transmission control system. The vacuum side member has a sleeve portion which extends through an aperture in the diaphragm and into an annular channel in the atmospheric pressure side member so that the sleeve portion is positioned between the channel's inner and outer wall. The outer channel wall is staked to the sleeve portion to provide mechanical connection in the subassembly. Apparatus is also shown for the staking operation which in cooperation with a radial section of the sleeve portion engaging the channel prevents crushing of the socket during the staking operation.

Probable Assignee: GEN MOTORS CORP

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THROTTLE CONTROL

Abstract: Source: US3603297A 1. 1. A control for a vehicle equipped with an air-consuming internal combustion engine and an apparatus for controlling the rate of flow of said air to said engine, said apparatus including air induction passage means formed therethrough for communication with an air intake portion of said engine and variably openable throttle **valve** means for controlling the rate of flow of said air through said induction passage means, said control comprising first differential pressure responsive means having at least first and second operating positions and being effective for at certain times to assume said first operating position and permit said throttle **valve** means to be moved to a nominally closed position and at other times effective to assume said second operating position and operatively engage said throttle **valve** means in order to maintain said throttle **valve** means in a partially opened position and preclude movement of said throttle **valve** means to said nominally closed position, a source of vacuum, conduit means for communicating said vacuum to said first differential pressure responsive means, and second means effective during all vehicle speeds below a predetermined vehicle speed for preventing the application of the full degree of said vacuum to said first differential pressure responsive means in order to cause said first differential pressure responsive means to permit said throttle **valve** means to be moved to said nominally closed position, said second means also being effective during all vehicle speeds at least equal to said predetermined vehicle speed for enabling the application of a greater degree of said vacuum to said first differential pressure responsive means in order to have said first differential pressure responsive means become effective for precluding movement of said throttle **valve** means to said nominally closed position, said apparatus for controlling the rate of flow of said air to said engine comprising a carburetor, said source of **vacuum** comprising **engine vacuum**, said variably openable throttle **valve** means comprising a rotatably positionable throttle **valve** situated within said induction passage means on a transversely extending pivotally mounted throttle shaft, said first differential pressure responsive means comprising a hollow stemlike base portion fixedly secured with respect to said carburetor, a first flexible wall carried by said base and fixed with respect thereto, a second wall carried by said base 50 as to be movable with respect thereto, connecting means operatively interconnecting said first and second walls so as to define a chamber therebetween exposed to said **engine vacuum**, a movable abutment portion operatively connected to said second wall and movable therewith, including lever means connected to said throttle shaft for rotating said throttle shaft and throttle **valve** toward opened and closed positions, said movable abutment portion being placed in the path of travel of said lever means whenever said second wall is moved toward said first wall through the action of said **engine vacuum**.

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