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Records: 17 (1-17 of 17)
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1. Family 71784623 (US2021285346 AA)

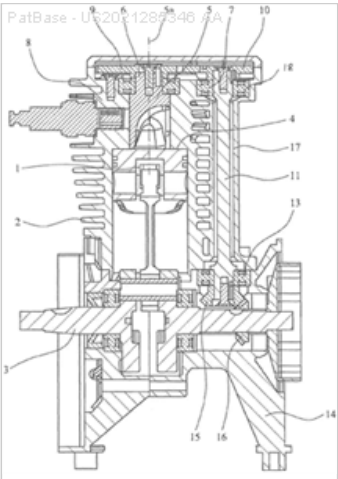
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Title
[EN] A ROTARY VALVE INTERNAL COMBUSTION ENGINE

Abstract
[EN] A spark ignition rotary valve internal combustion engine includes a combustion chamber being defined in part by the piston and the combustion end of the cylinder, a valve housing fixed at an outer portion of the combustion end of the cylinder and defining a bore, and a rotary valve rotatable about a rotary valve axis in the bore in the valve housing. The rotary valve has a hollow valve body subjected to combustion gases throughout the combustion process. The rotary valve also has, in a wall part thereof, a port giving, during rotation of the valve, fluid communication successively to and from the combustion chamber via inlet and exhaust ports in the valve housing. The inlet and exhaust ports are angularly offset with respect to a radial line from the center of the engine cylinder.

International Class: F01L7/02; F02F1/42; F01L1/02; F02B63/02; F02F1/24; F02M35/10; F01L31/18; F01L7/04; F01L7/08; F01L7/18; F02B53/02; F02B63/00; F02M35/024; F01L7/00; F02B29/00; F02B75/02; F01L7/16; F01N1/02; F02M35/02

Cooperative Patent Class: F01L7/028; F01N1/00; F01N1/02; F01N13/08; F01N2590/06; F02B63/02; F02F1/242; F02F1/42; F02M35/0204; F02M35/10144; F01L1/026; F01L2301/00; F01L2303/00; F01L2313/00; F01L7/023; F01L2250/06; F01L7/021; F01L7/022; F02M35/10039; F01L7/025; F01L2001/0476; F01L2303/02; F01L31/18; F01L7/026; F01L7/16



Family Information

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GB2576906 A1	20200311	GB20180014508	20180906
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	TW202039991 A	20201101	TW20190147183	20191223
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Priority Numbers: GB20180014502 [20180906]; GB20180014508 [20180906]; GB20180014514 [20180906]; GB20180014530 [20180906]; GB20180014496 [20180906]; GB20180014512 [20180906]; GB20190000656 [20190117]; WO2019EP73559 [20190904]; GB20190012690 [20190904]

Probable Patent Assignee: RCV ENGINES LTD

Assignees: KAAZ CORP; RCV ENGINES LTD; KAAZ CORPORATION

Inventors: LAWES KEITH; MASON BRIAN; KEITH LAWES; BRIAN MASON

Agent(s): MADDERNS PTY LTD; JENSEN AND SON; KARCESKI IP LAW PLLC; KARCESKI IP LAW PLLC

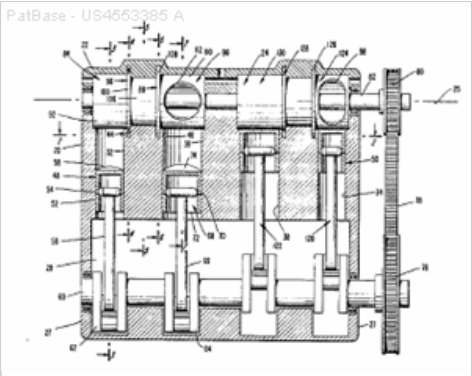
Designated States: AL; AT; BA; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LI; LT; LU; LV; MC; ME; MK; MT; NL; NO; PL; PT; RO; RS; SE; SI; SK; SM; TR; AE; AG; AM; AO; AU; AZ; BB; BF; BH; BJ; BN; BR; BW; BY; BZ; CA; CF; CG; CI; CL; CM; CN; CO; CR; CU; DJ; DM; DO; DZ; EC; EG; GA; GD; GE; GH; GM; GN; GQ; GT; GW; HN; ID; IL; IN; IR; JO; JP; KE; KG; KH; KM; KN; KP; KR; KW; KZ; LA; LC; LK; LR; LS; LY; MA; MD; MG; ML; MN; MR; MW; MX; MY; MZ; NA; NE; NG; NI; NZ; OM; PA; PE; PG; PH; QA; RU; RW; SA; SC; SD; SG; SL; SN; ST; SV; SY; SZ; TD; TG; TH; TJ; TM; TN; TT; TZ; UA; UG; US; UZ; VC; VN; ZA; ZM; ZW

2. Family 4902801 (US4553385 A)

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Title
[EN] INTERNAL COMBUSTION ENGINE

Abstract
[EN] An internal combustion engine has separate compression and expansion cylinders which are closed by a rotary valve structure. The rotary valve structure controls intake to the compression cylinder, transfer of compressed gas from the compression cylinder to a combustion chamber, transfer of combustion products from the combustion chamber to the expansion cylinder and exhaust of gases from the expansion cylinder. The valve structure is a one-piece rotationally symmetric unit which is synchronized with movement of piston assemblies carried in the compression cylinder and expansion cylinder, respectively. To maximize compression, the piston face is shaped to conform with rotationally symmetric sides of the valve structure. And to expand the combustion products to near ambient pressure, the expansion cylinder and cooperating piston assembly have a larger volume than the compression cylinder and cooperating compression piston assembly.



International Class: F01L7/00; F01L7/02; F02B1/00; F02B1/04; F02G3/00; F02G3/02

Cooperative Patent Class: F01L7/025; F02B1/04; F02G3/02

US Class: 123/190.8; 123/190BD; 60/39.6

Family Information

	Patent Number	Publication Date	Application Number	Application Date
	US4553385 A	19851119	US19830553083	19831118

Priority Numbers: US19830553083 [19831118]

Probable Patent Assignee: LAMONT JOHN S

Assignees: LAMONT JOHN S

Inventors: LAMONT JOHN S

3. Family 4955484 (US5095870 A)

[View in PatBase](#)

Title
[EN] ROTARY VALVE FOUR-CYCLE ENGINE

Abstract
[EN] An internal combustion engine which includes a combustion head adapted to be bolted to the top of a cylinder block and includes a solid cylindrical rotary valve extending longitudinally in a complementary bore in the head which is parallel to the axis of the crankshaft of the engine. The valve has a pair of cutout passages respectively in different rotary angular positions relative to each cylinder in the engine and respectively comprising intake and exhaust passages that communicate respectively with gas inlet ports and exhaust outlet ports in the combustion head, thereby providing a simple substitute for poppet-type valves and the operating mechanism therefor in internal combustion gasoline engines.

International Class: F01L7/00; F01L7/02; F01L7/16; F02B1/00; F02B1/04; F02B75/02

Cooperative Patent Class: F01L7/022; F01L7/16; F02B1/04; F02B2075/027

US Class: 123/190.4; 123/190.6; 123/190.8; 123/80BA

Family Information

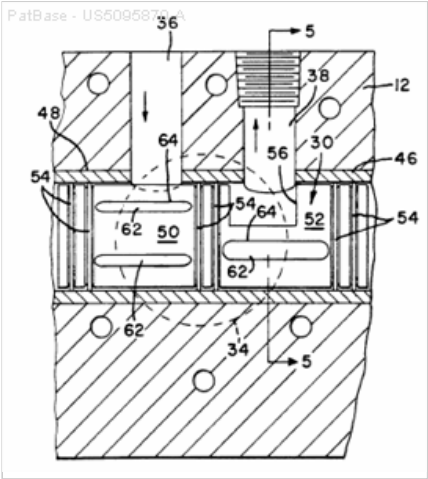
Patent Number	Publication Date	Application Number	Application Date
US5095870 A	19920317	US19910716406	19910617

Priority Numbers: US19910716406 [19910617]

Probable Patent Assignee: PLACE GEORGE C

Assignees: PLACE GEORGE C; RAHRIG CLIFFORD G

Inventors: PLACE GEORGE C; RAHRIG CLIFFORD G

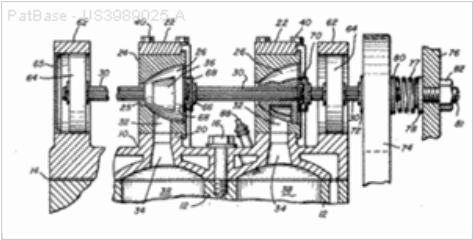


4. Family 1336507 (US3989025 A)

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Title
[EN] ROTARY VALVE

Abstract
[EN] The valve system of this invention is for use on an internal combustion engine having a plurality of pistons slidable in respective cylinders each forming a combustion chamber. The engine comprises a block forming the cylinders and having a head or rotary valve housing mounted to the top of the block. In a multiple cylinder in-line engine design, a shaft is suitably supported extending within the housing and is driven via a timing belt from the crankshaft. A plurality of preferably parabolically shaped rotors are fixedly disposed along the length of the shaft at predetermined intervals with each rotor positioned above a cylinder and received by a bushing of the housing. The shaft is preferably spring loaded at one end and supported by bearings at both ends. Each rotor is constructed of a pressed graphite and has an arcuate recess for providing selective communication between either an inlet port or an exhaust port and a passage in the head leading to the combustion chamber.



International Class: F01L7/00; F01L7/08; F04C1/06
Cooperative Patent Class: F01L7/08
US Class: 123/190.17; 123/190.4; 123/190.7; 123/190.9; 123/190BE; 123/80BA; 123/80.0BA

Family Information

	Patent Number	Publication Date	Application Number	Application Date
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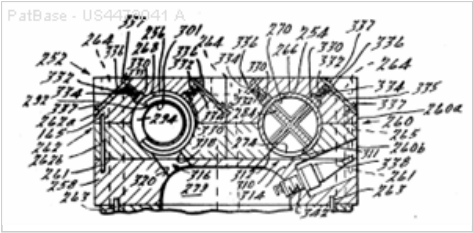
Priority Numbers: US19750550285 [19750218]
Probable Patent Assignee: FRANCO DANIEL
Assignees: FRANCO DANIEL
Inventors: FRANCO DANIEL

5. Family 4499932 (US4473041 A)

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Title
[EN] ROTARY VALVE ENGINE

Abstract
[EN] Rotary inlet and exhaust valves disposed within the cylinder head located at one end of at least one cylinder of a vehicle engine, the cylinder having inlet and exhaust ports, and the valves having a mechanism to feed an inlet charge to and exhaust from the respective cylinder ports along the axis of rotation of the valves. Mechanisms for reducing eddy losses, insulating the exhaust valve, and lubricating the valves by either a wet or dry lubricator, or both, are also included, as well as single and multi-cylinder variations of the valves for various vehicle engines.



International Class: F01L7/00; F02B75/02; F01L7/16
Cooperative Patent Class: F01L7/00; F02B2075/027
US Class: 123/190.16; 123/190.17; 123/190.2; 123/190A; 123/190DL; 123/190E; 123/80BA; 123/80.0BA

Family Information

Patent Number	Publication Date	Application Number	Application Date
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US4545337 A	19851008	US19840611627	19840518

Priority Numbers: US19810330563 [19811214]; US19840611627 [19840518]
Probable Patent Assignee: KOSA DAVID R
Assignees: KOSA DAVID R; LYONS GEORGE A
Inventors: KOSA DAVID R; LYONS GEORGE A

6. Family 22349873 (US2531699 A)

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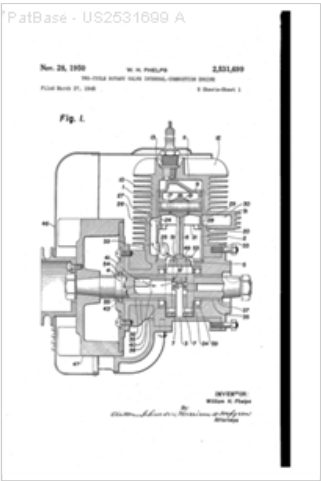
Title
[EN] TWO-CYCLE ROTARY VALVE INTERNAL-COMBUSTION ENGINE

Abstract
[EN] (Claim 1) 1. In a two cycle rotary valve internal combustion engine, a cylinder, a crank case fixed to said cylinder, a crank shaft in said crank case and having a crank arm and crank pin, a piston, a short connecting rod connecting said piston and said crank pin, the length L of the connecting rod and the bore B of the cylinder being in accordance with the formula $LX.69=B$.

International Class: F01L7/00; F01L7/12; F02B75/16

Cooperative Patent Class: F01L7/12; Y10S425/121

US Class: 123/195R; 123/73DA; 425/DIG.121; 123/73.0DA



Family Information

Patent Number	Publication Date	Application Number	Application Date
US2531699 A	19501128	US19480017563	19480327

Priority Numbers: US19480017563 [19480327]
Probable Patent Assignee: HOWARD PHELPS WILLIAM
Assignees: HOWARD PHELPS WILLIAM
Inventors: HOWARD PHELPS WILLIAM
Non Std Inventors: PHELPS WILLIAM HOWARD

7. Family 1696786 (US4098238 A)

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Title
[EN] ROTARY VALVE SYSTEM FOR MOTORS AND THE LIKE HAVING IMPROVED SEALING MEANS

Abstract
[EN] A rotary valve system for a motor and the like includes a flow conduit and rotary valve means interposed in the flow conduit. Intermittent sealing means are provided for preventing flow through the flow conduit, comprising a sealing surface intermittently positionable in stationary, sealing relationship across the conduit. Means are also provided for moving the sealing surface into such stationary sealing relationship with the flow conduit, and out of sealing relationship with the flow conduit in a manner correlating with the operation of the rotary valve means, to facilitate sealing as the valve operates.

International Class: F01L15/00; F01L15/14; F01L5/00; F01L5/02; F01L7/00; F01L7/02; F01L7/16; F02B1/00; F02B1/04; F01L7/14; F16C29/00; F16C29/02; F16K31/36; F16K31/363; F01L1/28; F01L3/00; F01L5/14

Cooperative Patent Class: F01L1/08; F01L15/14; F01L5/02; F01L7/023; F01L7/10; F02B1/04; F01L7/14; F16C29/025; F16C32/06; F16K31/363

US Class: 123/188.0B; 123/188.4; 123/188B; 123/190.1; 123/190.4; 123/190.8; 123/79R; 123/81.00B; 123/81B

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	Patent Number	Publication Date	Application Number	Application Date
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	EP0003333 A1	19790808	EP19790100158	19790119
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Priority Numbers: US19760653195 [19760128]; US19770801634 [19770531]; CA19780304283 [19780529]; US19780870921 [19780119]

Probable Patent Assignee: ALTO AUTOMOTIVE INC

Assignees: ALTO AUTOMOTIVE INC

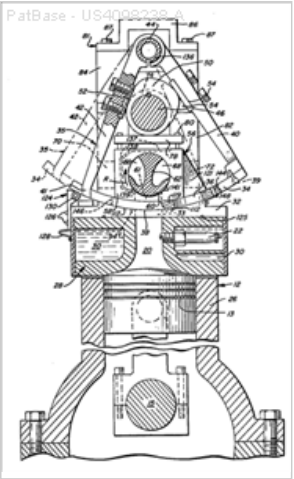
Non Std Assignees: VALLEJOS TONY E

Inventors: VALLEJOS TONY E; VALLEJOS TONY ELOY; TONII II BAREJIYOSU

Non Std Inventors: ELOY VALLEJOS TONY; TONII II BAREJOSU

Agent(s): KIRBY EADES GALE BAKER

Designated States: FR; GB; IT; SE



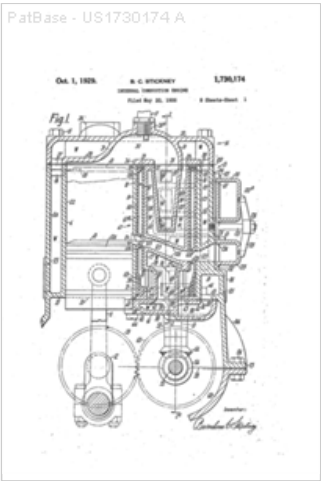
8. Family 19756748 (US1730174 A)

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Title
[EN] INTERNAL-COMBUSTION ENGINE

Abstract
[EN] 1. In an internal combustion engine, the combination of 21 one»piece block having therein st row of integral engine cylinders and correspoildincv integral valve chests standing side by side with the engine cylinders, said block having it water-jncketing including both the engine cylinders and the valve chests, valves revolving in said chests, 'internal seats for said valves, said seats being internally water-jacketed in communication 'with the watenjacketing of tielollock, st gas conduit joining the top of each cylinder to the top of its valve chest and means whollyiat the lower ends of the valve seats for detachably securing said ,seats by their lower ends to said block within said chests, `

International Class: F01L7/00; F01L7/02
Cooperative Patent Class: F01L7/029
US Class: 123/59.1; 123/80C



Family Information

Patent Number	Publication Date	Application Number	Application Date
US1730174 A	19291001	US19260110340	19260520

Priority Numbers: US19260110340 [19260520]
Probable Patent Assignee: STICKNEY BURNHAM C
Assignees: STICKNEY BURNHAM C
Inventors: STICKNEY BURNHAM C

9. Family 53291519 (US2013074792 AA)

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Title
[EN] ENGINE LUBRICATION METHOD

Abstract
[EN] A four-cycle engine has a lightweight aluminum alloy engine block having a cylindrical bore and an enclosed oil reservoir formed therein. A crankshaft is rotatably mounted in the engine block for rotation about a crankshaft axis. A piston reciprocates within the bore and is connected to the crankshaft by a connecting rod. An oil pump driven by the cam gear, which mates with crank gear that is driven by crank shaft, inhales the oil from the oil reservoir and the valve chamber to splash lubricate into the cylinder bore. The engine is provided with a cylinder head assembly defining a compact combustion chamber having a pair of overhead intake and exhaust ports and cooperating intake and exhaust valves.

International Class: F01L1/34; F01M1/02; F02B75/02; F01M1/16; F01L1/047; F01L1/18; F01M9/06; F01M9/10; F02B63/02; F01M13/00; F01M3/04; F02B25/06

Cooperative Patent Class: F01L1/026; F01L1/146; F01L1/18; F01L1/181; F01L1/20; F01L1/34; F01L2810/02; F01M2001/0261; F01M1/02; F01M1/04; F01M1/16; F01M11/065; F02B75/02; F16N7/32; F01L1/047; F01L2250/06; F01M9/06; F01M9/106; F02B63/02

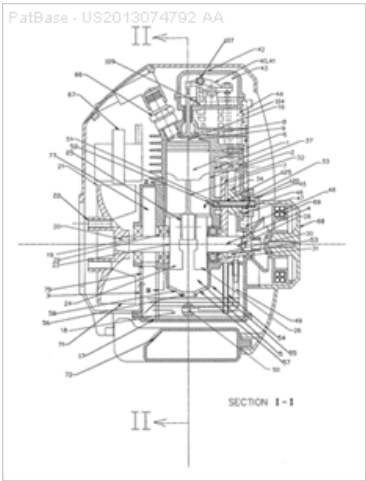
US Class: 123/196M; 123/196R; 123/311; 123/41.86; 123/572; 123/573; 123/574; 123/90.17; 123/90.31; 123/90.44

Family Information

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	US2014096738 AA	20140410	US20130102900	20131211
	US2015020760 AA	20150122	US20140510171	20141009
	US8627809 BB	20140114	US20120465110	20120507

Priority Numbers: US20110239803 [20110922]; US20120465110 [20120507]; US20130102900 [20131211]; US20140510171 [20141009]

Probable Patent Assignee: ETG LTD
Assignees: YAMAMOTO SHIGEO; ETG LTD; KURIHARA KATSUMI
Non Std Assignees: ETG LIMITED
Inventors: KURIHARA KATSUMI; YAMAMOTO SHIGEO
Agent(s): IPUSA PLLC

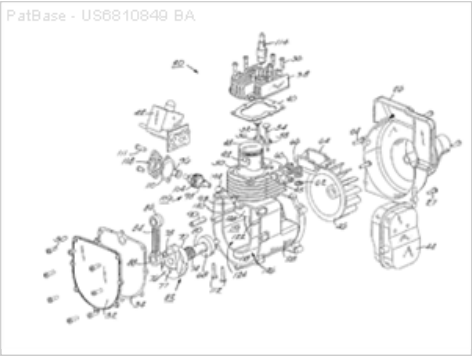


10. Family 24684012 (US6810849 BA)

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Title
[EN] FOUR-STROKE INTERNAL COMBUSTION ENGINE

Abstract
[EN] A four-stroke internal combustion engine is provided that is capable of use in many power tools, including those power tools subjected to tippable applications. There is provided within an engine housing an oil reservoir and a valve chamber which independently communicate with a crank chamber. A strategically placed divider and passageway, located within the engine housing, appropriately direct lubricant within the engine housing so that the internal cavity of the engine is lubricated during use in various operating attitudes, and so that the fluid flows to and is held in the proper chambers of the engine housing during storage. There is also provided a breather arrangement for an internal combustion engine which includes a cam shaft having a hollow passageway in communication with the crank chamber and the air intake system of the engine.



International Class: F01M1/02; F01M1/04; F01M1/06; F01M11/00; F01M11/06; F01M13/00; F01M13/02; F01M13/04; F01M3/00; F01M9/06; F01M9/10; F02B1/04; F02B63/00; F02B63/02; F02B67/00; F02B67/04; F02B69/00; F02B75/02; F02B75/16; F02F1/24; F02F1/30; F02F7/00; F16H55/06; F16H55/22; F01M1/00; F01M9/00; F02B1/00; F02B75/00; F02F1/26; F16H55/02; F01M11/02; F16C3/14; F01L1/02; F02F1/00; F02F1/02; F02F1/10; F02F1/18; F02F1/20; F02F1/22; F02B75/32; F02N1/00

Cooperative Patent Class: F01L1/024; F01M1/04; F01M11/0004; F01M11/06; F01M11/064; F01M11/065; F01M11/067; F01M13/022; F01M2011/0041; F01M2013/0422; F01M3/00; F02B1/04; F02B2075/027; F02B2275/22; F02B2275/30; F02B63/02; F02B69/00; F02B75/16; F02F1/305; F05C2201/021; F01M2001/064; F01M9/10; F16H57/043

US Class: 12/34.156; 123/185.3; 123/196; 123/196R; 123/197.4; 123/311; 123/41.56

Family Information

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	AU2003200807 AA	20030501	AU20030200807	20030305
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	AU2004212603 AA	20041104	AU20040212603	20040920
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	AU760498 B2	20030515	AU20000026107	20000113
	CA2368207 AA	20010720	CA20002368207	20000113
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	CA2458861 AA	20000727	CA20002458861	20000113
	CA2458862 AA	20000727	CA20002458862	20000113
	CA2458868 AA	20000727	CA20002458868	20000113
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	CA2458878 AA	20000727	CA20002458878	20000113
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	CN100368661 C	20080213	CN200510055026	20000113
	CN1218118 C	20050907	CN20008003081	20000113
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	CN1298973 C	20070207	CN200410059093	20000113
	CN1298974 C	20070207	CN200410059096	20000113
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	Patent Number	Publication Date	Application Number	Application Date
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Priority Numbers: US19990117215P [19990125]; WO2000US00841 [20000113]; AU20000026107 [20000113]; AU20030200807 [20030305]; AU20040212603 [20040920]; CA20002458861 [20000113]; CA20002368207 [20000113]; CA20002458862 [20000113]; CA20002458868 [20000113]; CA20002458873 [20000113]; CA20002458878 [20000113]; CA20002481880 [20000113]; EP20000904332 [20000113]; JP20000595043T [20000113]; US20010600096 [20010607]; US20040896598 [20040721]

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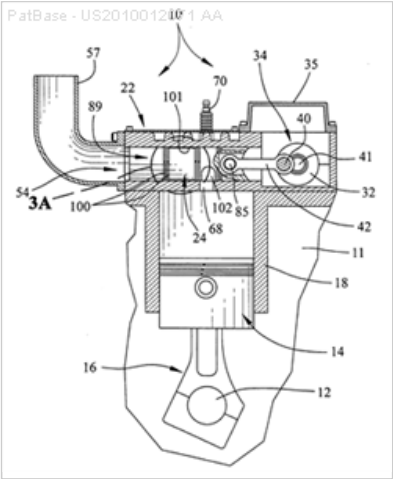
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11. Family 44245430 (US2010012071 AA)

[View in PatBase](#)

Title
[EN] SLIDING VALVE ASPIRATION SYSTEM

Abstract
[EN] An internal combustion engine uses separate, tubular and hollow reciprocating sleeve valves that open and close intake and exhaust passageways for improved aspiration. The sliding sleeve valves are disposed within sleeves horizontally disposed within a modified head secured above the combustion chamber. The valves are driven in a path normal to the engine pistons by an independent crankshaft that is rotated through an external pulley driven by the engine crankshaft. Fluid flow occurs through the valve interior and through ports dynamically positioned above the compression cylinder, proximate aligned sleeve and head ports. Sleeve ports are separated by bridges that maintain valve rings in compression during reciprocation to prevent damage. Each valve body has a reduced diameter midsection forming a relief annulus that distributes shearing pressures about the circumference of the valve. High pressure gas is confined between axially spaced apart, stepped sealing rings that prevent gases from flowing axially about the valve exterior.



International Class: F01L5/00; F01L5/02; F01L5/04

Cooperative Patent Class: F01L2301/00; F01L7/02; F01L7/14; F01L7/16; F01L1/053; F01L1/26; F01L11/02; F01L2250/02; F01L2250/04; F01L2820/01; F01L5/00; F01L5/04

US Class: 123/188.1; 123/188.4; 123/188.5; 123/188.500P; 123/190.12; 123/190.8; 123/81C; 123/81R

Family Information

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Priority Numbers: US20080135267P [20080718]; US20090387184 [20090429]; US20120443077 [20120410]; US20130863710 [20130416]

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Assignees: GRACE CAPITAL PARTNERS LLC; COTTON GARY W

Inventors: COTTON GARY W

Agent(s): STEPHEN D CARVER SUITE 800; STEPHEN D

12. Family 12227900 (DE19514559 A1)

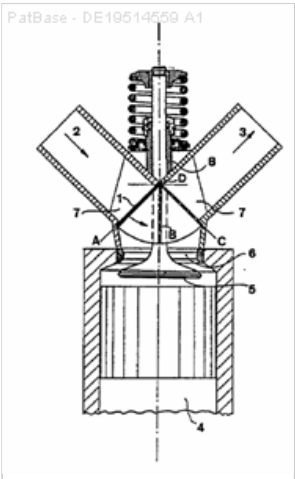
[View in PatBase](#)

Title
[EN] Engine cylinder charge changer between valved inlet/outlet ducts

Abstract
[EN] On the non-combustion chamber side, the valves (5) are joined to a rotary switching disc or plate (1). The switch is fitted with inlet (2) and outlet ducts (3) so that the disc or plate makes a full or partial turn to switch the connected valves into their open setting during intake and exhaust strokes to the intake and outlet ducts respectively. The rotation of the disc or plate closes off one duct and opens the other in the two end settings of the disc or plate. Disc or plate are rotated off a stepping motor. In a variant, the switching element (1) is made of a linear or rotary slide which switches the two ducts between respective open and closed settings. Switching can also be performed by axial reciprocation of a piston, moved off a camshaft.

International Class: F01L1/28; F01L13/02; F02B29/02; F02F1/42

Cooperative Patent Class: F01L1/28



Family Information

	Patent Number	Publication Date	Application Number	Application Date
	DE19514559 A1	19961024	DE19951014559	19950420

Priority Numbers: DE19951014559 [19950420]

Probable Patent Assignee: BAEHRING HORST DIPL PHYS DR

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Inventors: BAEHRING HORST DIPL PHYS DR

13. Family 55708859 (US2014338358 AA)

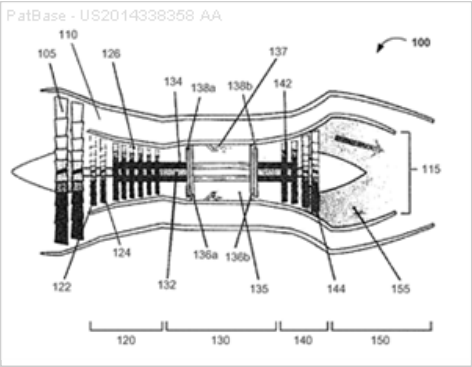
[View in PatBase](#)

Title

[EN] INTERNAL DETONATION ENGINE, HYBRID ENGINES INCLUDING THE SAME, AND METHODS OF MAKING AND USING THE SAME

Abstract

[EN] Hybrid internal detonation-gas turbine engines incorporating detonation or pulse engine technology (such as an internal detonation engine), and methods of manufacturing and using the same are disclosed. The internal detonation engine includes a detonation chamber having a fuel igniter therein, a stator at one end of the detonation chamber having at least a first opening to receive fuel, a rotor adjacent to the stator, and an energy transfer mechanism configured to convert energy from igniting or detonating the fuel to mechanical energy. The detonation chamber and fuel igniter are configured to ignite or detonate a fuel in the detonation chamber. Either the stator or the detonation chamber has a second opening to exhaust detonation gas(es). The rotor has one or more third openings therein configured to overlap with at least the first opening as the rotor rotates.



International Class: F01L7/06; F02C5/02; F02C5/08; F02K7/04; F02K7/06; F23R7/00; F02C3/06; F02C3/14; F02C3/20; F02C6/20; F02C7/04; F02C7/057; F02K3/06; F02B77/08; F01B21/04; F02B69/06; F01L1/02; F01L5/04; F02C5/12

Cooperative Patent Class: F01B21/04; F01L1/02; F01L5/045; F01L7/06; F02B69/06; F02C3/064; F02C3/14; F02C3/20; F02C5/02; F02C5/12; F02C6/20; F02C7/057; F02K3/06; F02K7/06; F05B2220/302; Y02T50/60

US Class: 1/1; 60/698; 60/774; 60/776; 60/791

Family Information

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Green	JP2015524893 T2	20150827	JP20150524356T	20130719
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Green	TW201413102 A	20140401	TW20130126421	20130724
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Red	US9447712 BB	20160920	US20150860428	20150921
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Priority Numbers: US20120741661P [20120724]; US20120797161P [20121130]; WO2013US51396 [20130719]; US20130946829 [20130719]; US20150860428 [20150921]

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Inventors: LEE BRENT WEI TEH; BRENT LEE

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Designated States: AL; AT; BA; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HR; HU; IE; IS; IT; LI; LT; LU; LV; MC; ME; MK; MT; NL; NO; PL; PT; RO; RS; SE; SI; SK; SM; TR; AE; AG; AM; AO; AU; AZ; BB; BF; BH; BJ; BN; BR; BW; BY; BZ; CA; CF; CG; CI; CL; CM; CN; CO; CR; CU; DM; DO; DZ; EC; EG; GA; GD; GE; GH; GM; GN; GQ; GT; GW; HN; ID; IL; IN; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LY; MA; MD; MG; ML; MN; MR; MW; MX; MY; MZ; NA; NE; NG; NI; NZ; OM; PA; PE; PG; PH; QA; RU; RW; SC; SD; SG; SL; SN; ST; SV; SY; SZ; TD; TG; TH; TJ; TM; TN; TT; TZ; UA; UG; US; UZ; VC; VN; ZA; ZM; ZW

14. Family 77320515 (US2020018196 AA)

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Title

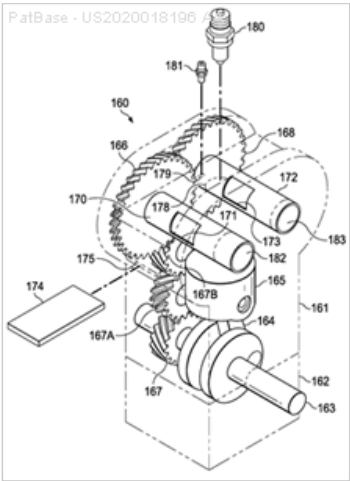
[EN] INTAKE AND EXHAUST VALVE SYSTEM FOR AN INTERNAL COMBUSTION ENGINE

Abstract

[EN] In an internal combustion engine, first and second rotating members, one for the intake valve and one for the exhaust valve rotate next to the outside of an engine cylinder on opposite sides thereof when driven by a drive gear attached to the end of the engine's crankshaft. Each rotating member may include a ring gear having a valve port or aperture near its perimeter that cyclically aligns with a corresponding valve port formed through the cylinder wall near the top of the cylinder. A method of controlling valve timing comprises the steps of causing the rotating member containing the second valve port to periodically align in synchronism with the first port to control the passage of an air/fuel mixture and exhaust gases through the combustion cycles of the engine.

International Class: F01L1/02; F01L1/12; F01L7/00; F01L7/02; F01L7/06; F01L1/26; F01L7/14; F01L7/18; F02F1/22; F02F7/00; F16H1/06; F01L5/04

Cooperative Patent Class: F01L1/00; F01L1/026; F01L1/12; F01L1/267; F01L5/04; F01L5/06; F01L7/00; F01L7/02; F01L7/026; F01L7/028; F01L7/029; F01L7/04; F01L7/06; F01L7/14; F01L7/18; F02F1/22; F02F7/0043; F16H1/06; F16H1/12; F01L1/34; F01L13/0015; F01L2001/0537; F01L2301/02; F01L2820/034; F01L7/021; F01L7/025; F01L7/10; F01L7/16; F04D25/02; F04D29/284; F05D2220/40; F01L5/20



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Priority Numbers: US20180697183P [20180712]; US20190509156 [20190711]; WO2019US41534 [20190712]; US20200028028 [20200922]; US20220572264 [20220110]; US20220572074 [20220110]

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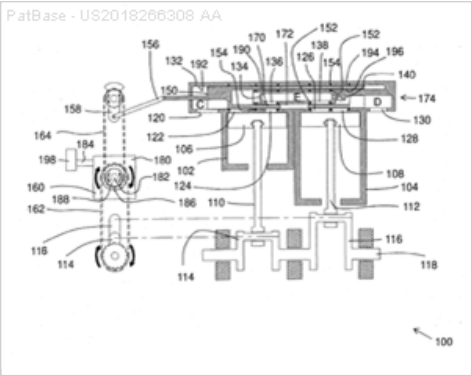
Designated States: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BE; BF; BG; BH; BJ; BN; BR; BW; BY; BZ; CA; CF; CG; CH; CI; CL; CM; CN; CO; CR; CU; CY; CZ; DE; DJ; DK; DM; DO; DZ; EC; EE; EG; ES; FI; FR; GA; GB; GD; GE; GH; GM; GN; GQ; GR; GT; GW; HN; HR; HU; ID; IE; IL; IN; IR; IS; IT; JO; JP; KE; KG; KH; KM; KN; KP; KR; KW; KZ; LA; LC; LK; LR; LS; LT; LU; LV; LY; MA; MC; MD; ME; MG; MK; ML; MN; MR; MT; MW; MX; MY; MZ; NA; NE; NG; NI; NL; NO; NZ; OM; PA; PE; PG; PH; PL; PT; QA; RO; RS; RU; RW; SA; SC; SD; SE; SG; SI; SK; SL; SM; SN; ST; SV; SY; SZ; TD; TG; TH; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; ZA; ZM; ZW

15. Family 63002820 (US2018266308 AA)

[View in PatBase](#)

Title
[EN] SPLIT CYCLE ENGINE WITH CROSSOVER SHUTTLE VALVE

Abstract
[EN] A split-cycle internal combustion engine (ICE) is provided, comprising a compression cylinder, an expansion cylinder and a crossover valve having a valve cylinder housing inside a shuttle and a combustion chamber structure defining a combustion chamber. The shuttle is configured to perform reciprocating motion inside the valve cylinder synchronously with a compression piston and an expansion piston, thereby alternately fluidly coupling and decoupling the combustion chamber with the compression cylinder and with the expansion cylinder, selectively. Sealing rings positioned between the valve cylinder and the shuttle prevent gas leaks between them during the reciprocating motion. In some embodiments, a phase shift between the pistons may be set or varied by a piston phase transmission gear. A bi-directional fluid flow split-cycle internal combustion engine (ICE) is also provided having a first cylinder, a second cylinder, a combustion chamber and a single crossover valve fluidly communicating them. A three-cylinders split-cycle internal combustion engine (ICE) is also provided, having a compression cylinder and a combustion chamber, wherein a single crossover valve alternately fluidly couples the combustion chamber to two or more expansion cylinders.



International Class: F01L5/04; F01L7/02; F02B33/22; F02B33/44; F02B41/06
Cooperative Patent Class: F01L5/045; F01L7/02; F02B33/22; F02B33/44; F02B41/06
US Class: 1/1; 123/58.1

Family Information

	Patent Number	Publication Date	Application Number	Application Date
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Green	US2018266308 AA	20180920	US20160544497	20160119
Red	WO16116928 A1	20160728	WO2016IL50061	20160119

Priority Numbers: US20150104885P [20150119]; US20150138435P [20150326]; US20150197582P [20150728]; WO2016IL50061 [20160119]; US20160544497 [20160119]
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Designated States: AE; AG; AL; AM; AO; AT; AU; AZ; BA; BB; BE; BF; BG; BH; BJ; BN; BR; BW; BY; BZ; CA; CF; CG; CH; CI; CL; CM; CN; CO; CR; CU; CY; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; FR; GA; GB; GD; GE; GH; GM; GN; GQ; GR; GT; GW; HN; HR; HU; ID; IE; IL; IN; IR; IS; IT; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LV; LY; MA; MC; MD; ME; MG; MK; ML; MN; MR; MT; MW; MX; MY; MZ; NA; NE; NG; NI; NL; NO; NZ; OM; PA; PE; PG; PH; PL; PT; QA; RO; RS; RU; RW; SA; SC; SD; SE; SG; SI; SK; SL; SM; SN; ST; SV; SY; SZ; TD; TG; TH; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; ZA; ZM; ZW

16. Family 43926949 (WO03107523 A1)

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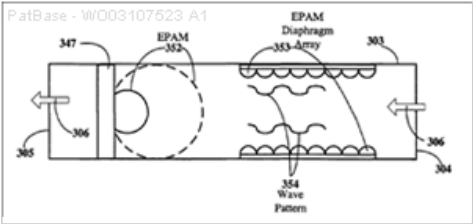
Extended Family Number: 42244704

Title

[EN] ELECTROACTIVE POLYMER DEVICES FOR CONTROLLING FLUID FLOW

Abstract

[EN] The invention describes devices for controlling fluid flow (306), such as valves. The devices may include one or more electroactive polymer transducers (308, 309) with an electroactive polymer (308, 309) that deflects in response to an application of an electric field. The electroactive polymer (308, 309) may be in contact with a fluid where the deflection of the electroactive polymer (308, 309) may be used to change a characteristic of the fluid. Some of the characteristic of the fluid that may be changed include but not limited to, 1) a flow rate, 2) a flow direction, 3) a flow vorticity, 4) a flow momentum, 5) a flow mixing rate, 6) a flow turbulence rate, 7) a flow energy, 8) a flow thermodynamic property. The electroactive polymer (308, 309) may be a portion of a surface of a structure that is immersed in an external fluid flow, such as the surface of an airplane wing or the electroactive polymer (308, 309) may be a portion of a surface of a structure used in an internal flow (306), such as a bounding surface of a fluid conduit (300).



International Class: A61M5/142; F01L1/46; F01L7/02; F01L9/04; F04B35/00; F04B43/04; F15D1/06; F16K31/02; H01L41/09; H01L41/16; H02N1/00

Cooperative Patent Class: A61M5/142; A61M5/14276; F01L1/46; F01L2301/00; F01L7/02; F01L9/20; F04B35/00; F04B43/043; F15D1/025; F15D1/065

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Priority Numbers: US20020362560P [20020305]; US20020154449 [20020521]; WO2003US07115 [20030305]; EP20030719361 [20030305]

Probable Patent Assignee: STANFORD RES INST INT

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Non Std Assignees: SRI INTERNATIONAL; SRI INT; SRI INTERNATIONAL MENLO PARK; SRI INT MENLO PARK

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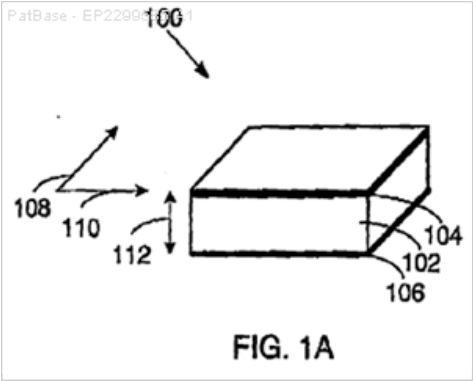
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Title

[EN] ELECTROACTIVE POLYMER DEVICES FOR CONTROLLING FLUID FLOW

Abstract

[EN] The invention describes devices for controlling fluid flow (306), such as valves. The devices may include one or more electroactive polymer transducers (308, 309) with an electroactive polymer (308, 309) that deflects in response to an application of an electric field. The electroactive polymer (308, 309) may be in contact with a fluid where the deflection of the electroactive polymer (308, 309) may be used to change a characteristic of the fluid. Some of the characteristic of the fluid that may be changed include but not limited to, 1) a flow rate, 2) a flow direction, 3) a flow vorticity, 4) a flow momentum, 5) a flow mixing rate, 6) a flow turbulence rate, 7) a flow energy, 8) a flow thermodynamic property. The electroactive polymer (308, 309) may be a portion of a surface of a structure that is immersed in an external fluid flow, such as the surface of an airplane wing or the electroactive polymer (308, 309) may be a portion of a surface of a structure used in an internal flow (306), such as a bounding surface of a fluid conduit (300).



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