



- (51) International Patent Classification:  
*F01C 1/20* (2006.01)
- (21) International Application Number:  
PCT/IB2014/058592
- (22) International Filing Date:  
28 January 2014 (28.01.2014)
- (25) Filing Language: English
- (26) Publication Language: English
- (72) Inventor; and
- (71) Applicant : NAGY, Imre [HU/HU]; Klapka ut 61, H-1193 Budapest (HU).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,

MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

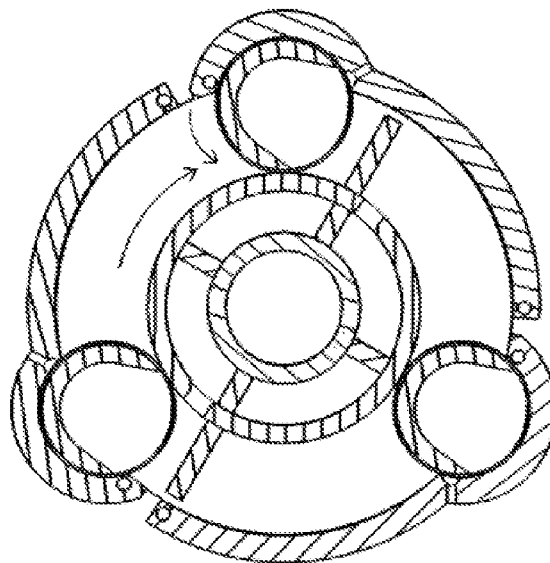
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report (*Art. 21(3)*)
- with amended claims (*Art. 19(1)*)

(54) Title: NONE COMPRESSION INTERNAL COMBUSTION ROTOR AND METHOD

Fig.7



(57) Abstract: A none-compression internal combustion rotor motor and method to eliminate all of the disadvantages of the presently available internal combustion engines. By eliminating the compression stroke, increasing the efficiency. By replacing the crank shaft, the valve train and the cast iron parts with the main rotor, the combustion pressure can be converted into much higher rotational power and torque and efficiency. By having less parts, and by manufacturing from aluminum, eliminating all of the cast iron parts, reducing the manufacturing energy consumption. By having only balanced rotating parts that rotate on bearings without touching each other, greatly increasing the lifetime of the motor. The none-compression internal combustion rotor motor is air cooled needing no coolant, making it environmentally friendly.

## DESCRIPTION

None compression internal combustion rotor motor and method.  
This invention is relates to the internal combustion engines.

## BACKGROUND OF THE INVENTION

The problems of the currently used Internal Combustion engines are:

[001] By analyzing the currently used internal combustion engines designs and working method it becomes clear that:

[002] The fuel / Hp. Efficiency are: 20% -30% it means 70% to 80% of the fuel is wasted to air pollution.

[003] # 1 cause of the low fuel /Hp. Efficiency is:  
The compression stroke: responsible for 30% - 40% of the efficiency loss.

[004] # 2 cause of the low fuel / Hp. Efficiency is:  
The up and down piston movement converted to a rotating movement with a crank shaft is: responsible for 25% - 30% loss of the efficiency.

[004] The high weight / Hp. Proportion of the piston engines is: 3 – 4 kg / Hp.

[005] # 1 cause of the high weight / Hp. Is:  
The low fuel / Hp efficiency, cause of the larger engines / Hp.

[006] # 2 cause of the high weight / Hp. Is:  
Most of the parts of the engines are made of forged steel and cast iron.

[007] # 1 cause of the high manufacturing energy consumption is:  
The low fuel / Hp. Efficiency mean larger engines / Hp.

[008] # 2 cause of the high manufacturing energy consumption is:  
The high temperature of manufacturing the steel and cast iron parts.

[009] # 3 cause of the high manufacturing energy consumption is:  
The machine finishing all of the forged steel and cast iron parts.

[010] My study resulted in a design and method that addresses all of these problems, yielding the only method to build highly economical none-compression internal combustion rotor motor.

[011] The high fuel / Hp. Efficiency engine: by eliminating the compression stroke, and the up and down piston movement.

[012] The Low weight / HP – proportion engine: by eliminating the valve train, the forged steel crank shaft and all the cast iron pars.

[013] The High torque engine: by increasing the diameter of the blades.

[014] The Low manufacturing energy consumption: by the simple design, less parts, and made of aluminum.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

[035] The none compression internal combustion rotor motor and method according to the present invention comprises:

[036] The side discs Fig.8 with bearings inserted in the centre for the main rotor Fig.15, and bearings inserted in for the three timing rotors at the edges of the side discs.

[037] The main rotor Fig.15 and Fig.16 with tubular main shaft, multiple spacers between the main shaft and the drum Fig.7 parts number 38, with two blades fig.7 parts number 35, and 36, inserted in the bearings of the front and rear discs Fig 8. and the main timing gear placed on the main shaft at the front side Fig.17, Fig.18

[038] Three "C" shape timing rotors Fig.11 inserted in between the front and rear side discs, the timing gears placed on the font side Fig.17 and Fig.18. to synchronize the rotation of the "C" shape timing rotators into the position to let the blades Fig.7 parts number 35 and 36, rotating free but enclosing the space between the combustion chamber cover Fig.7 parts number 30 and the drum of the main shaft Fig.7 parts number 38, to create an enclosed combustion chamber.

[039] In the preferred embodiment according to the present invention, the none compression internal combustion rotor motor has three combustion chamber cover Fig.7 parts number 30 containing multiple exhaust ports, Fig.7 parts number 32, and multiple fuel injector ports and spark plug ports Fig.7 parts number 31.

[040]The combustion chamber covers are placed on the top edge of the two side discs Fig 17 and Fig.18 to cover the "C" shape timing rotor and the side discs as part of the combustion chamber.

## DESCRIPTION OF THE PREFERRED METHOD

The preferred method of the none compression internal combustion rotor motor.  
According to this invention.

[040] The working method of the present invention, the none compression internal combustion rotor motor, in the preferred embodiment has three "C" shape timing rotors, Fig. 7 parts number 33/A, 33/B, 33/C, and three combustion chamber cover, and the direction of rotation of the "C" shape timing rotors are counter clock wise, and main rotor Fig.15 and Fig.16, with 2 blades Fig.7 parts number 35 and 36, and the direction of rotation of the main rotor is clock wise.

[041] When blade number 36 is in ignition position in combustion chamber "A" Fig.1, (the timing rotor 33/A is enclosed the space between the combustion chamber cover 30 and the main drum 38) the fuel is injected and ignited.

[042] Before blade 36 get to the rear exhaust port of combustion chamber "A" Fig.2 (to let the exhaust out, at the same time timing rotor 33/A in position to open the front exhaust port of combustion chamber "A" with it's rear edge, Fig.1) blade 35 in position in chamber "C" Fig.2 to get ignited.

[043] Before blade 35 get to the rear exhaust port of combustion chamber "C", Fig.3, blade 36 get in position in chamber "B" Fig.3 to get ignited.

[044] Before blade 36 get to the rear exhaust port of combustion chamber "B" Fig.4, blade 35 in position in chamber "A" Fig.4, to get ignited.

[045] Before blade 35 get to the rear exhaust port of combustion chamber "A" Fig.5, blade 36 in position in chamber "C" Fig.5, to get ignited.

[046] Before blade 36 get to the rear exhaust port of combustion chamber "C" Fig. 6, blade 35 in position in chamber "A" Fig 1

[046] The cycle going on, with six combustion per revolution, and convert the combustion pressure to pure rotational high torque turning power.

[047] The diameter of the motor diameter can be made in any size, the timing rotor diameter and main rotor diameter ratio can be 1:1, or 1:2, or 1:3, or 1:4 or more.

## BRIEF DESCRIPTION OF THE DRAWINGS

[022] Fig.1 to Fig.6 View of the cross-sections showing the working method of the none compression internal combustion rotor motor according to the present invention.

[023] Fig.7 View of the cross section with the parts numbers from 30 to 39 and indicate the direction of the rotors of the none compression internal combustion rotor motor according to the present invention.

[024] Fig.8 Front view of the side disc of the none compression internal combustion rotor motor according to the present invention.

[025] Fig.11 top view of the “C” shape timing rotor, according to the present invention.

[026] Fig.12 cross section of the “C” shape timing rotor, according to the present invention.

[027] Fig.13 side view of the “C” shape timing rotor, according to the present invention.

[028] Fig.14 3D view of the “C” shape timing rotor, according to the present invention.

[029] Fig.15 longitudinal cross section of the main rotor, according to the present invention.

[030] Fig.16 cross section of the main rotor, according to the present invention.

[031] Fig.17 side view of the motor with timing gears, according to the present invention.

[032] Fig.18 front side view of the motor with timing gears, according to the present invention.

[033] Drawing page number 1/3 Showing the side view and cross section view for all of the parts of the non compression internal combustion rotor motor according to the present invention.

## NONE COMPRESSION INTERNAL COMBUSTION ROTOR MOTOR AND METHOD

Inventor: Nagy Imre

Corresponding address:

Nagy Imre  
1193 Budapest  
Klapka ut 61  
HUNGARY

Email address: nagyairship@nagyairship.com

Tel.: + 36 20 294 0614

## REFERENCES CITED

## UNITED STATES PATENTS

3,996,903	12/1976	Cseh
8,202,066	6/2012	Nakken
1,829,391	11/1931	Bullington
1,904,892	4/1933	Trube
2,182,269	12/1939	Whritenour
2,988,065	6/1961	Wankel Et Al
3,359,954	12/1967	Eiermann Et Al
1,568,051	1/1926	Bullington
3,688,749	9/1972	Wankel
3,990,405	11/1976	Kecik
3,937,187	2/1976	Bergen

## CLAIMS

What I claim as my invention is:

None-compression internal combustion rotor-motor and method according to this invention comprising:

1. Two side discs with bearings for the main shaft and bearings for the "C" shape timing rotors.
2. Main rotor with main shaft, and center drum with multiple blades, and multiple spacers and multiple holes for venting air, and main timing gear.
3. Multiple "C" shape timing rotors with timing gear.
4. Multiple combustion chamber covers, with fuel injector ports, spark plug ports, exhaust ports.
5. A method of the none compression internal combustion rotor motor according to this invention: The "C" shape timing rotors rotation is synchronized by the timing gears into a position to let the blades rotate free, but closing the space after the blade passed thru, creating an enclosed combustion chamber, filed with fresh air, without a compression, and at the same time fuel is injected in and ignited by the spark, by the end of the combustion section the blade edge passing over the rear exhaust port and the "C" shape timing rotor edge passing over the front exhaust port to exhaust.

## AMENDED CLAIMS

received by the International Bureau on 10 November 2014 (10.11.2014)

CLAIMS: I claim as my invention is:

(Currently amended)

1. The None-compression internal combustion rotor-motor and method according to this invention, comprising:
  - Two side discs.
  - Balanced main rotor.
  - Balanced multiple "C" shapes timing rotors.
  - Multiple combustion chambers covers.

The two side disc of the None-compression internal combustion rotor motor of claim 1, contains: bearings for the main rotor and the "C" shape timing rotors.

The balanced main rotor of the None-compression internal combustion rotor motor of claim 1, contains: tubular main shaft, with multiple venting holes, multiple spacers, the main drum, with multiple venting holes, multiple blades, and main timing gear.

The balanced "C" shape timing rotors of the None-compression internal combustion rotor motor of claim 1, contains: timing gears.

(Currently amended)

2. The None-compression internal combustion rotor motor of claim 1, the rotating direction side of the multiple blades working like a radial air blower, all the blades continuously blowing high volume of fresh air, from the centre of the main shaft, thru the multiple venting holes of the main shaft, and thru the multiple venting holes of the main drum, to cool the entire interior of the side discs, the inside and outside of the "C" shape timing rotors, and the inside of the combustion chamber covers, an fill up the combustion chamber with fresh air, without pressure to eliminate the use of coolant.

(Currently amended)

3. The None-compression internal combustion rotor motor of claim 1, contains: only balanced rotors, with no sealing rings or seals, that rotates on bearings without touching each other, or any other parts, eliminate: all the up and down moving parts, the crank shaft, the valve train, the vibration, and the use of forced oil lubrication.

(Currently amended)

4. The working method of the None-compression internal combustion rotor motor, according to this invention:

The "C" shape timing rotors rotation is synchronized by the timing gears into a position to let the blades rotate free, but enclosing the space between the main drum and the combustion chamber cover after the blade passed thru, creating an enclosed combustion chamber, filled with fresh air without compression, at the same time fuel is injected in, and ignited by the spark. Just before the end of the combustion stroke, the blade edge passing over the rear exhaust port, at the same time the "C" shape timing rotor rear edge is passing over the front exhaust port also, to exhaust.

(Currently amended)

5. The innovative design and method of the None-compression internal combustion rotor motor according to this invention: Makes it possible with the multiple combustion chambers and multiple blades of the preferred embodiment, to have six combustions per revolution, have the blades alternately under combustion in every degree of the rotation.

(Currently amended)

6. The innovative design and method of the None-compression internal combustion rotor motor according to this invention: makes it possible to have more combustion chambers and more blades, to have much more combustions in a single rotation than six. Just by changing the ratio between the diameter of the main drum, and the diameter of the timing rotors:

If the timing rotors diameter is **one third** of the main drum diameter, makes it possible to have four combustion chambers, and three blades, to have **twelve combustions** per revolution.

If the timing rotors diameter is **one fourth** of the main drum diameter, makes it possible to have five combustion chambers and four blades, to have **twenty combustions** per revolution.

If the timing rotors diameter is **one fifth** of the main drum diameter, makes it possible to have six combustion chambers, and five blades, to have **thirty combustions** per revolution.

It can continue unlimitedly, **there is no limits of the diameters, no limits of the ratios, and no limits of the heights and widths of the blades, and no limits of the rotational power and torque.**

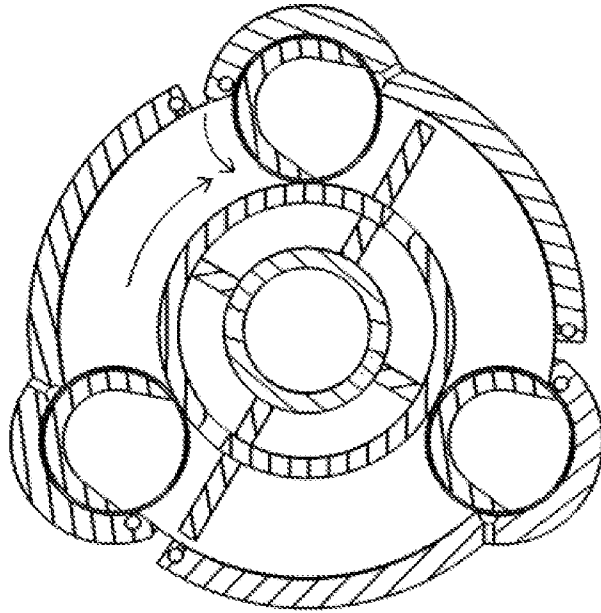


Fig.7

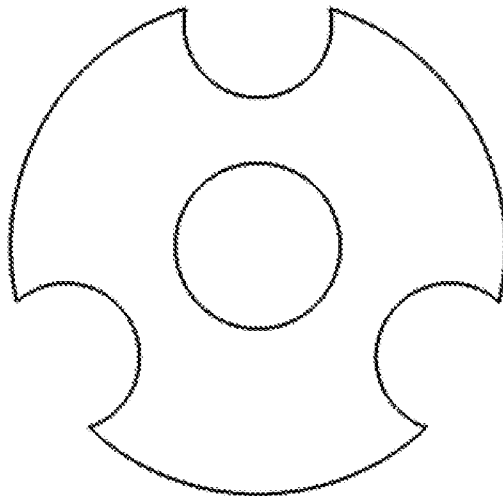


Fig.8

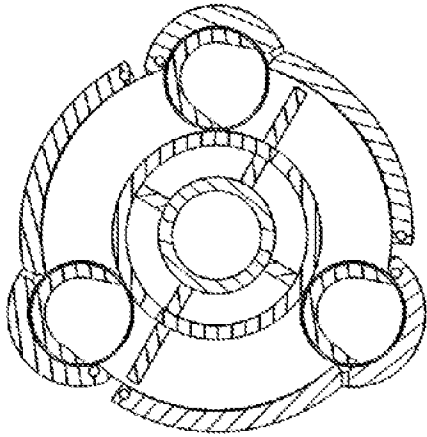


Fig.3

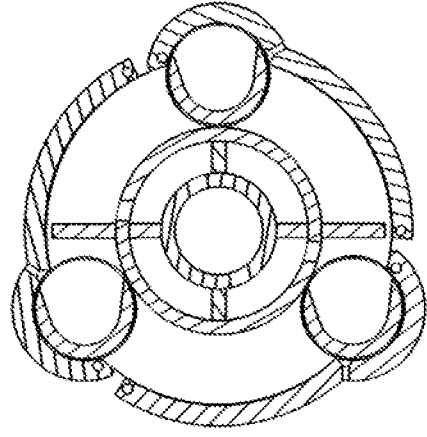


Fig.4

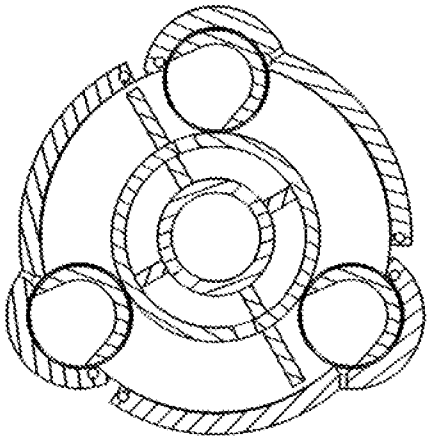


Fig.2

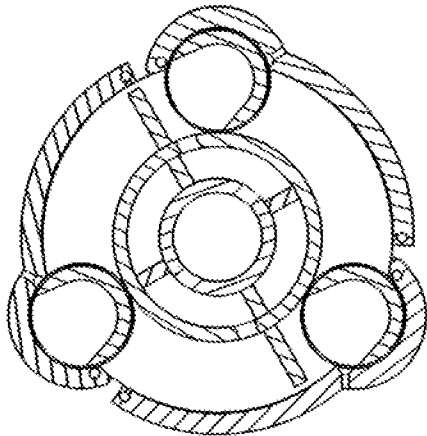


Fig.5

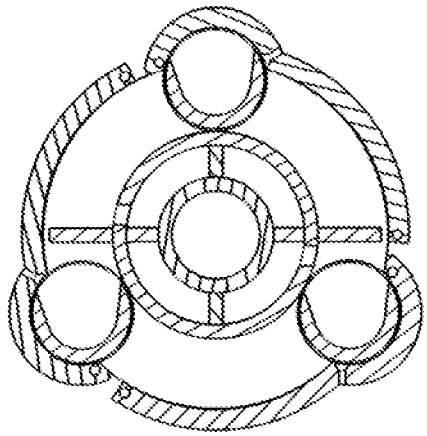


Fig.1

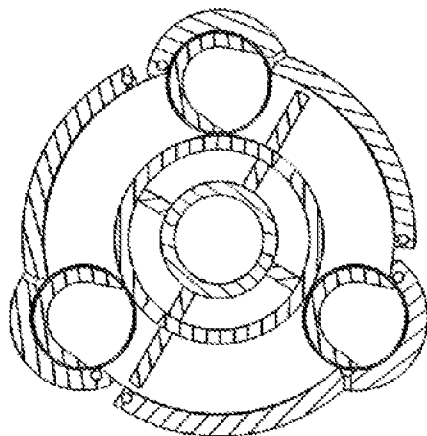
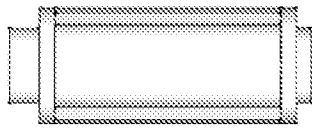
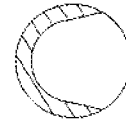


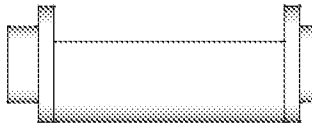
Fig.6



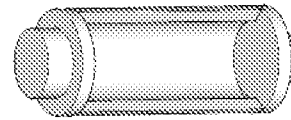
**Fig.11**



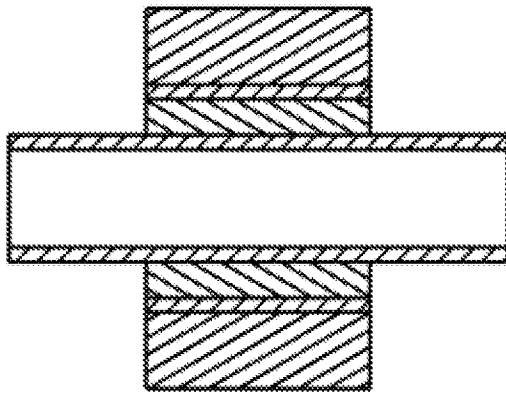
**Fig.12**



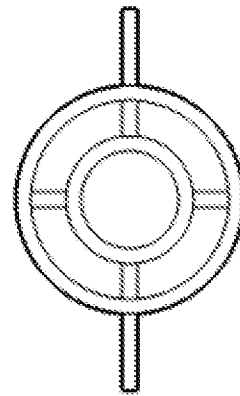
**Fig.13**



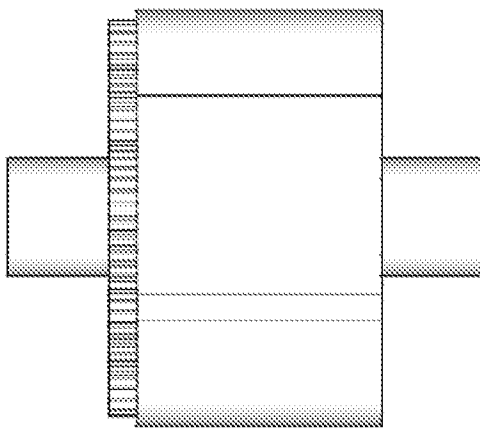
**Fig.14**



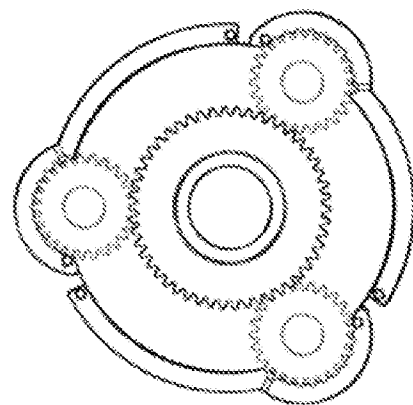
**Fig.15**



**Fig.16**



**Fig.17**



**Fig.18**

**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/IB2014/058592

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. F01C1/20  
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
F01C F02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 992 060 A (HENRY SAMUEL GILBERT) 12 May 1965 (1965-05-12) the whole document figure 2 page 1, line 13 - line 15 page 1, line 52 - line 81 -----	1-5
X	WO 2012/057838 A2 (VAZQUEZ JESUS [US]) 3 May 2012 (2012-05-03) the whole document page 2, line 24 page 11, paragraph 1 page 12, paragraph 2 -----	1-5
X	CH 647 843 A5 (FRANZ DOLDERER MOSIMANN) 15 February 1985 (1985-02-15) the whole document page 2, column 1, line 60 - line 62 -----	1-5
	-/--	

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

18 September 2014

26/09/2014

Name and mailing address of the ISA/  
European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040,  
Fax: (+31-70) 340-3016

Authorized officer  
  
Sbresny, Heiko

**INTERNATIONAL SEARCH REPORT**

International application No

PCT/IB2014/058592

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 139 529 A (DOMINION TYGARD ENGINE MFG COM) 11 March 1920 (1920-03-11) the whole document -----	1-5
A	DE 563 185 C (MATTHIAS WEISS ING) 2 November 1932 (1932-11-02) the whole document -----	1-5

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2014/058592

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 992060	A	12-05-1965	NONE
-----			
WO 2012057838	A2	03-05-2012	CN 103261625 A 21-08-2013
			US 2012103301 A1 03-05-2012
			WO 2012057838 A2 03-05-2012
-----			
CH 647843	A5	15-02-1985	NONE
-----			
GB 139529	A	11-03-1920	NONE
-----			
DE 563185	C	02-11-1932	NONE
-----			