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(71) Applicant: **Grossi, Giorgio**
00144 Roma (IT)

(72) Inventor: **Grossi, Giorgio**
00144 Roma (IT)

(74) Representative: **Iannone, Carlo Luigi et al**
Barzanò & Zanardo Roma S.p.A.
Via Piemonte 26
00187 Roma (IT)

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(54) **Method for increasing sucked air-fuel fluid amount in two-stroke engines to obtain a higher power and engine using said method**

(57) The invention relates to a method for increasing amount of air-fuel fluid sucked and burnt in two-stroke engines in order to obtain a higher power, characterized in that a fan (1) is provided integrally rotating with output shaft (2) of the engine, taking its motion and in that said

fan (1) is provided inside the engine carter-pump (5). The invention further relates to an internal combustion engine using said method.

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Description

[0001] The present invention relates to a method for increasing amount of sucked and burnt air-fuel fluid mixture in two stroke engines in order to obtain a higher power and to an engine using said method.

[0002] More particularly, the invention provides installing a fan within carter-pump of two-stroke engines, suitably keyed and fixed to output shaft, said fan rotating with the same number of revolutions of the output shaft, thus increasing sucked flow during phase of opening sucking channel and a subsequent increase of pumping pressure when closing carter and subsequent opening of cylinder sucking transfer.

[0003] Thus, a higher filling of cylinder is obtained, and thus a higher specific power of the engine during combustion phase.

[0004] At present, two-stroke engines make suction of fluid necessary to combustion by movement upward of the piston.

[0005] Method according to the invention permits increasing amount of sucked fluid.

[0006] These and other results are obtained, according to the invention, by a method as claimed in independent claim 1. Further features of the inventive method will be evident from dependent claims.

[0007] The invention further relates to a two-stroke internal combustion engine as defined in independent claim 4.

[0008] Present invention will be now described, for illustrative, but not limitative purposes, according to its preferred embodiment shown in the enclosed drawings, wherein:

Figure 1 is a section view of an apparatus according to the invention; and

Figure 2 schematically shows some components of apparatus of figure 1.

[0009] Observing figures of the enclosed drawings, it is shown a two-stroke engine according to prior art, wherein a fan 1, having helix blade 9, is provided, said fan 1 being integral with output shaft 2, said fan 1 rotating producing an additional suction of supply fluid 8 through opening 12 with respect to suction obtained only by piston 3 when naturally moving upward.

[0010] During this phase, suction valve 4 is obviously opened, in the embodiment shown a valve with a disc 13 rotating on relevant washer 11, while, during the following phase, piston 3 descends, rotating disc valve 4 is closed and fluid within carter-pump 5 is compressed.

[0011] In this phase, a further increase of pressure due to the fan 1, moving as well, is added to compression of fluid by descending piston 3, said piston 3 reducing inner volume of carter-pump 5.

[0012] When cylinder 7 suction transfer 6 open, a higher amount of entering fluid 10 occurs, thus giving a higher thrust during combustion and thus a higher power of en-

gine.

[0013] Present invention has been described, for illustrative, but not limitative purposes, according to its preferred embodiments, but it is to be understood that variations and/or modifications can be introduced by those skilled in the art without departing from relevant scope as defined in the enclosed claims.

Claims

1. Method for increasing amount of air-fuel fluid sucked and burnt in two-stroke engines in order to obtain a higher power, **characterized in that** a fan is provided integrally rotating with output shaft of the engine, taking its motion and **in that** said fan is provided inside the engine carter-pump.
2. Method according to claim 1, **characterized in that** said fan, rotating, causes an increase of fluid which is sucked and then pushed within the cylinder thus increasing amount of fluid burnt by engine.
3. Method according to claim 1 or 2, **characterized in that** it can be applied to every two-stroke engine, regardless the kind of control of inlet of fluids during the suction phase.
4. Two-stroke engine using a rotating fan realized on the same output shaft, said fan being of the hollow type, **characterized in that** suction portion keyed on output shaft is realized placing an helicoidal element within hollow wall of said output shaft, said helicoidal element action as sucking helix during the suction phase and as compressing helix during the compression phase.

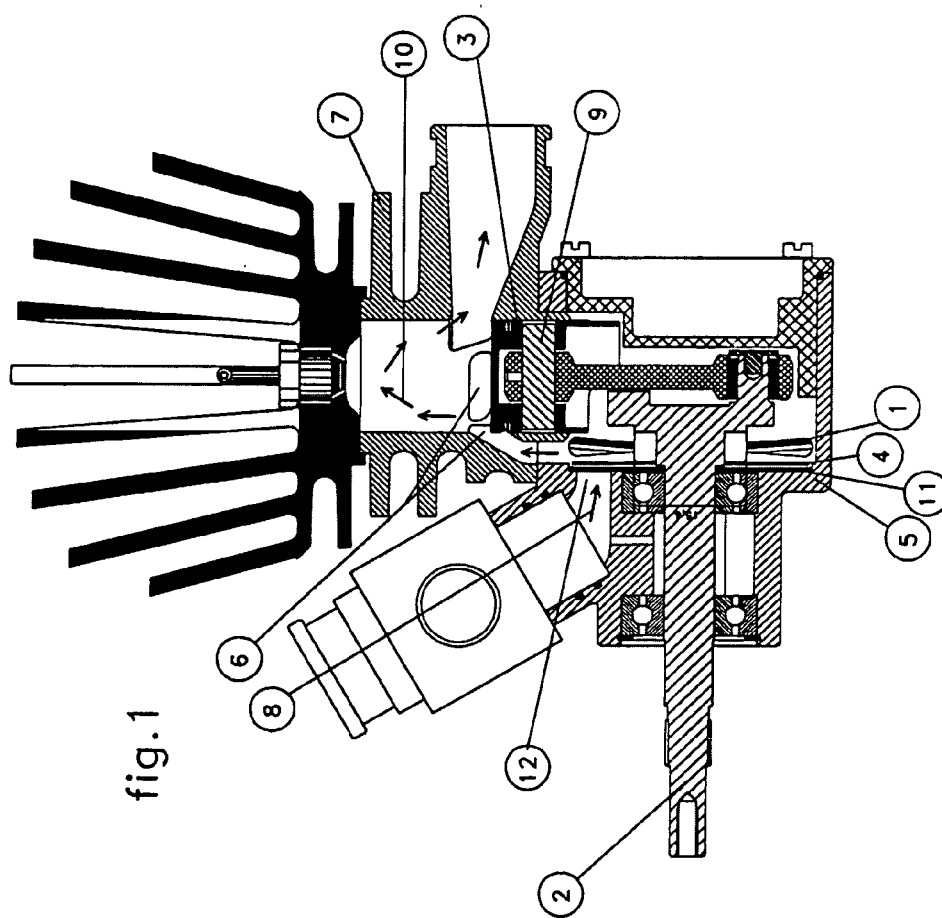
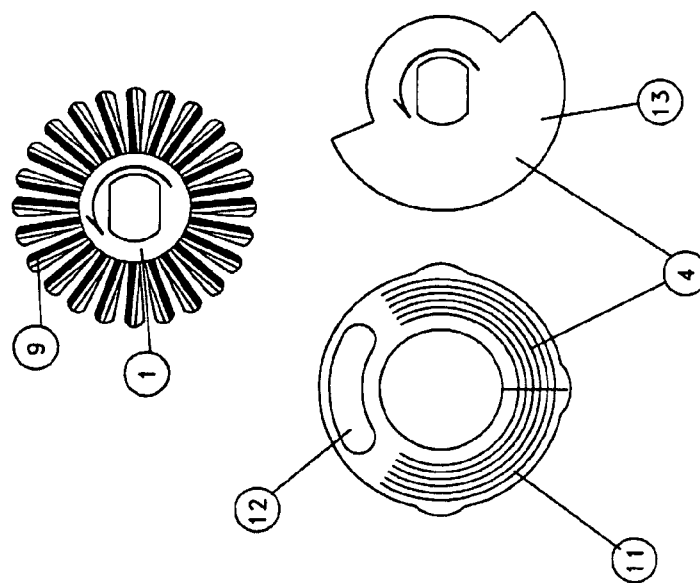


fig.2





EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 20 2009 004557 U1 (LIU NAI WEN [TW]) 2 July 2009 (2009-07-02) * figures 1-5 *	1-4	INV. F02B33/04 F02B33/20 F01L7/12 F02B75/34
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			TECHNICAL FIELDS SEARCHED (IPC)
			F02B F01L
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 24 October 2011	Examiner Morales Gonzalez, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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24-10-2011

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