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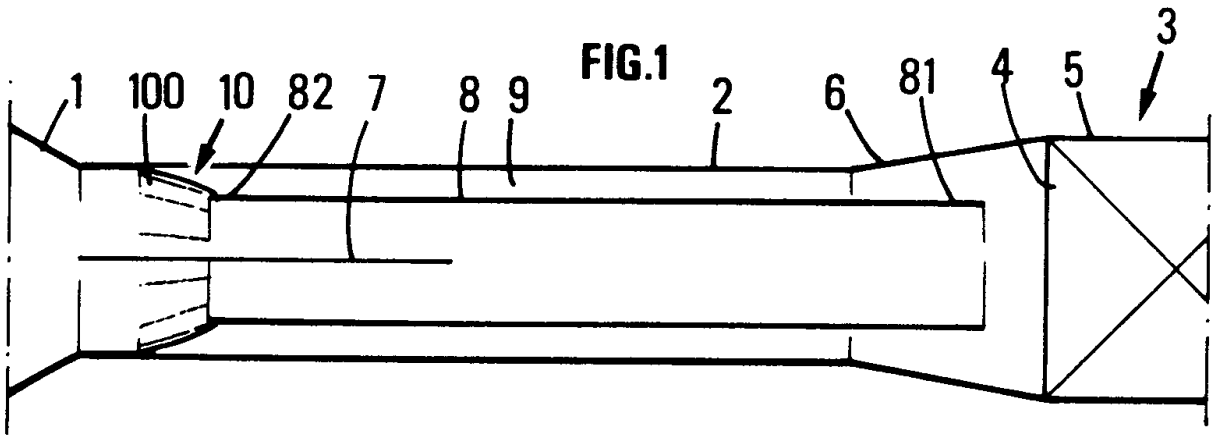

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EP0519778 A1 19921223 [EP-519778]
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STG: Application, first publication
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STG: United States patent
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JP3266652 B2 20020318 [JP3266652]
STG: Grant. Pat. With A from 2500000 on

Title

Exhaust line allowing rapid excitation of the catalytic converter.

Other Title

(EP-519778)
Motorauspufflinie zum schnellen Erregen eines Katalysators.
Ligne d'échappement permettant un amorçage rapide du catalyseur.
LIGNE D'ECHAPPEMENT PERMETTANT UN AMORCAGE PLUS RAPIDE DU CATALYSEUR.
Motorauspufflinie zum schnellen Erregen eines Katalysators.
CONDUCTO DE ESCAPE QUE PERMITE UN CEBADO RAPIDO DEL CATALIZADOR.

Index Terms

INTERNAL COMBUSTION ENGINE; EXHAUST PIPE; INNER TUBE; CATALYST; CLOSING MEMBER; RAPID TRIGGERING; TEMPERATURE

Abstract

(US5307628)
Device intended to improve the working of a catalyst (3) placed in the **exhaust** manifold of an **internal-combustion engine**, said **exhaust** manifold consisting of a tube (2) opening on one side into the collector (1) collecting the combustion gases coming from the cylinder(s) and covering with the other end thereof said catalyst (3). According to the invention, the device comprises: at least one pipe (8) inside said tube (2), having a first end (81) which opens in proximity to said catalyst (3), and a means (10) intended to selectively close the intertube volume (9) delimited between said inner pipe (8) and said tube (2) as a function of the temperature of the **exhaust** gases flowing onto said catalyst (3).

Designated States

(EP-519778)
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Priority Details

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Object of Invention

(US5307628)
The present invention relates to internal-combustion engines whose exhaust line comprises at least one catalyst.
The main object of the invention lies in an improvement of the exhaust line, notably as regards the priming time of the catalyst.
Another object of the present invention consists in better distributing the flow of the exhaust gases entering the catalyst in order to improve the performances thereof when warm.
To that effect, the object of the present application is a device placed inside the exhaust manifold of an internal-combustion engine, said manifold opening on one side into the collector collecting the combustion gases coming from the cylinder(s), and ending with the other end thereof in the catalyst.

Advantages / Prev. Drawbacks

(US5307628)

Application PCT WO 89/10,470 discloses an electric resistor heating system installed as close as possible to the catalyst.
The present invention allows to remedy the above-mentioned drawbacks by proposing an improved exhaust line.
Said selective closing means advantageously consists of a perforated tubular member arranged telescopically with respect to part of the inner pipe, perforations in the tubular member and in the inner pipe co-operating in order to close selectively said intertube volume.
However, when cold, a **catalytic muffler** has no effect on the pollutants released by the engine.
This delay must therefore be as short as possible.
This heating method is doubtless efficient but difficult to implement.

Independent Claims

(US5307628)
1. A device for improving the working of a catalyst placed in the exhaust manifold of an internal-combustion engine, said exhaust manifold comprising a tube connected to one side of a collector collecting the exhaust gases coming from the engine and opening at the other end thereof onto an inlet cone of said catalyst, said device comprising:
an inner pipe located inside said tube, said inner pipe being arranged coaxially with said tube and having a restricted section with respect to said tube, a small thickness and a first end opening in proximity of said catalyst, and
means for selectively closing an intertube space delimited between said inner pipe and said tube, as a function of the temperature of the exhaust gases led towards said catalyst so that the exhaust gases warm up a central portion of the catalyst when the selective closing means closes the intertube space.
3. A device for improving the working of a catalyst placed in the exhaust manifold of an internal-combustion engine, said exhaust manifold comprising a tube connected comprising a tube connected to one side of a collector collecting the exhaust gases coming from the engine and opening at the other end thereof onto an inlet cone of said catalyst, said device comprising:
an inner pipe located inside said tube, said inner pipe being arranged coaxially with said tube and having a restricted section with respect to said tube, a small thickness and a first end opening in proximity of said catalyst, and
means for selectively closing an intertube space delimited between said inner pipe and said tube, as a function of the temperature of the exhaust gases led towards said catalyst, said selective closing means comprising an annular member whose section completely covers the inlet of said intertube space when the catalyst is not primed.