(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 988 271 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
05.11.2008 Bulletin 2008/45

(51) Int Cl.:
F02D 17/04 *(2006.01)* ***F02D 41/02*** *(2006.01)*
F02D 41/12 *(2006.01)*

(21) Application number: **08102863.1**

(22) Date of filing: **21.03.2008**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

(30) Priority: **23.03.2007 IT RM20070156**

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(54) **Removable hood and related self-propelled vehicle**

(57) A removable hood (10) for engines, apt to be mounted on a self-propelled vehicle having the engine exposed outside, allows a protection from both the noise generated by the engine and external agents on the engine, even maintaining the typical advantages thereof and comprises: a case apt to be rested or fastened to a self-propelled vehicle (1) at an outside engine (9); air intakes (11, 12) formed on the case; means for sensing (16) the temperature inside the case; means of air forced draught (14) placed at said air intakes (11); means for cutting (21) the fuel supply to said engine (9), said means of air forced draught (14) and/or means for cutting (21) the fuel supply being preset to be activated at respective predetermined reference temperatures sensed by the means for sensing (16) the temperature inside the case.

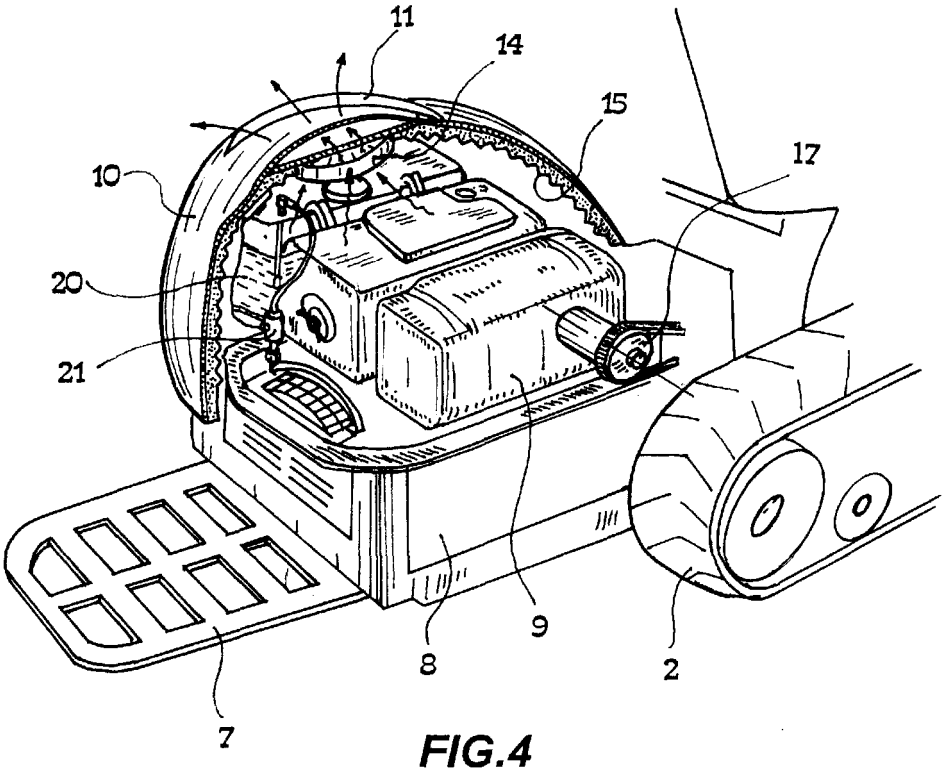

FIG.4

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Description

[0001] The present invention is related to a removable hood for engines and a self-propelled vehicle incorporating it.

[0002] Different kind of self propelled vehicles are known, having an external engine, provided with wheels or caterpillars and with a spark-ignition or diesel engine exposed at the outside of the vehicle itself. In particular, this kind of vehicle is used in earthmoving, in building industry and in agriculture, as plant machine and so on. In these simple structure machines, the outside position of the engine eases the maintenance and the servicing, and makes easier the assembling of the vehicle itself which does not require an external chassis. Also the engine cooling is simplified.

[0003] The operator, who may be onboard or stepping aside handling the controls, is obliged to be exposed to the heavy noise generated by the engine, which is particularly maddening for diesel engines and in case of long shifts.

[0004] Further, an engine expose outside may suffer by the weather agents, for the environment pollution, for the presence of dust in the atmosphere and so on.

[0005] The technical problem underlying the present invention is to provide a removable hood for self-propelled vehicles with an external engine allowing to obviate to the drawback mentioned with reference to the state of the art.

[0006] Such problem is solved by a hood as above specified, characterized in that it comprises:

* a case apt to be rested or fastened to a self-propelled vehicle at an outside engine;

* air intakes formed on the case;

* means for sensing the temperature inside the case;

* means of air forced draught placed at said air intakes;

* means for cutting the fuel supply to said engine,

said means of air forced draught and/or means for cutting the fuel supply being preset to be activated at respective predetermined reference temperatures sensed by the means for sensing the temperature inside the case.

[0007] The main advantage of the hood according to the present invention lies on allowing a protection from both the noise generated by the engine and external agents on the engine, even maintaining the typical advantages of an external engine.

[0008] The invention is also referred to a self-propelled vehicle incorporating a hood as above defined, rested or fastened to the outside engine.

[0009] The present invention will be described hereinafter according to a preferred embodiment thereof, provided to an exemplificative and non-limitative purpose with reference to the annexed drawings wherein:

* Figure 1 shows a perspective view of a self-loading dumper using a hood according to the invention;

* Figure 2 shows a further perspective view of the dumper of Figure 1;

* Figure 3A shows a bottom perspective view of a hood according to the invention;

* Figure 3B shows a partially sectioned perspective view of the hood of Figure 3A, showing the inside thereof; and

* Figure 4 shows a more detailed perspective view of the dumper of Figure 1, with a sectioned hood of Figure 3 illustrating the operation thereof.

[0010] With reference to the drawings, a self-propelled self-loading dumper 1 will be described hereinafter, on caterpillars 2, provided with a front earth bucket 4 mounted on a pair of arms 5, intended to be driven by an operator through controls 6 on a dashboard adjacent to a grated platform 7 on which the operator can stand upright.

[0011] However, it is understood that the hood of the present embodiment can be applied to any other self-propelled vehicle having an engine 9 exposed in an engine portion 8.

[0012] Said hood, globally indicated as 10, is composed by a case having a rounded shape englobing the whole engine 9 being rested on the edges of the engine portion 8.

[0013] The hood 10 is made of plastic or metallic material and, inside, it has a conventional-type sound-absorbent coating. It has a first top air intake 11, formed by two wide ports in a projection 13 of the case, and second side air intake 12, formed by a plurality of parallel slots passing through the thickness of the case.

[0014] The hood 10 has a rim in any case adapted to be rested to the edges of the engine portion 8. In the present embodiment, the case has two opposed grooves 18, apt to be engaged in respective pins 17 arranged on the self-propelled vehicle.

[0015] Inside said projection 13, the hood 10 has means of air forced draught arranged at said first air intake. In the present embodiment, the means of air forced draught comprises a electrically-driven fan 14, supplied by the electrical circuits of the self-propelled vehicle.

[0016] In the present embodiment, the fan 14 is mounted on the hood, but it is understood that another fan or other fan means incorporated in the same engine may be exploited.

[0017] Further, the hood 10 has means for sensing the temperature inside the case, having a temperature sensor 16, e.g. a thermocouple, connected so as to send a signal to a not shown unit, controlling also the operation

of the fan 14.

[0018] Finally, the hood 10 has means for cutting the fuel supply to said engine 9 from a tank, i.e. for intercepting, thank to an electro-valve 21 or another shutting member arranged on the fuel supply line, the fuel flow supplying the engine.

[0019] In this case, also the electro-valve 21 is connected to said unit.

[0020] By virtue of the latter, it is possible to control the operation of the means of air forced draught and also, or as an alternative, of the means for cutting the fuel supply according to the temperatures sensed inside the hood.

[0021] When the temperature inside the hood 10 overcomes a first threshold limit value, the fan 14 is operated both to blow in air inside the case and to extract air, to obtain a cooling of the engine room.

[0022] When such temperature overcomes a second threshold limit value, it is possible to proceed with the shutdown of the engine 9, through the cut of the fuel flow, for preventing the engine to be overheated.

[0023] To the above described hood a man skilled in the art, to meet further and contingent needs, may introduce several additional changes and variants, however all falling within the protection scope of the present invention, as defined by the annexed claims.

Claims

1. Removable hood (10) for engines, comprising:

* a case apt to be rested or fastened to a self-propelled vehicle (1) at an outside engine (9);
* air intakes (11, 12) formed on the case;
* means for sensing (16) the temperature inside the case;
* means of air forced draught (14) placed at said air intakes (11);
* means for cutting (21) the fuel supply to said engine (9),

said means of air forced draught (14) and/or means for cutting (21) the fuel supply being preset to be activated at respective predetermined reference temperatures sensed by the means for sensing (16) the temperature inside the case.

2. Hood (10) according to claim 1, having a rounded shape englobing the whole engine (9) being rested on the edges of the respective engine portion (8).

3. Hood (10) according to claim 1, having inside a sound-absorbent coating.

4. Hood (10) according to claim 1, wherein the means of air forced draught comprises a -driven fan 14.

4. Hood (10) according to claim 4, wherein said fan (14) is connected to a unit controlling the operation thereof.

6. Hood (10) according to claim 1, wherein the means for cutting the fuel supply to said engine (9) has an electro-valve (21) or another shutting member arranged on the fuel supply line.

7. Hood (10) according to claims 5 and 6, wherein said fan (14) and/or said electro-valve (21) are connected to said unit controlling the operation thereof.

8. Hood (10) according to claim 2, having a rim adapted to be rested on the edges of the engine portion (8).

9. Hood (10) according to claim 8, wherein said rim has two opposed grooves (18), apt to be engaged in respective pins (17) arranged on the self-propelled vehicle (1).

10. Self-propelled vehicle (1), particularly a dumper, incorporating a hood (10) as defined in any one of the preceding claims, rested or fastened to the outside engine (9).

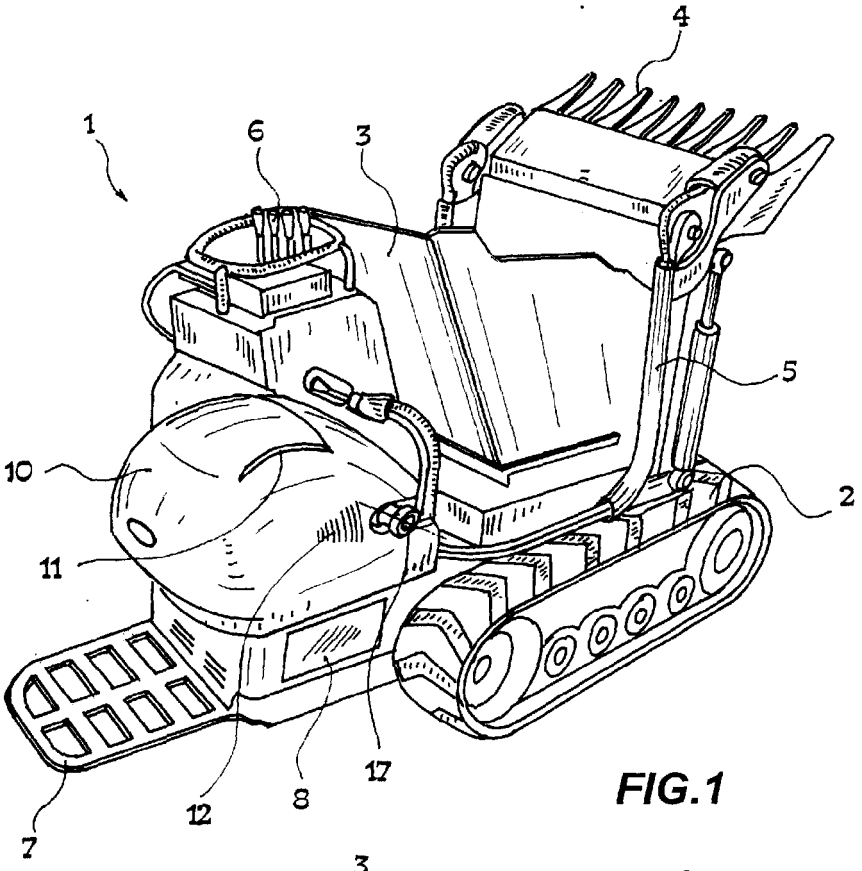

FIG.1

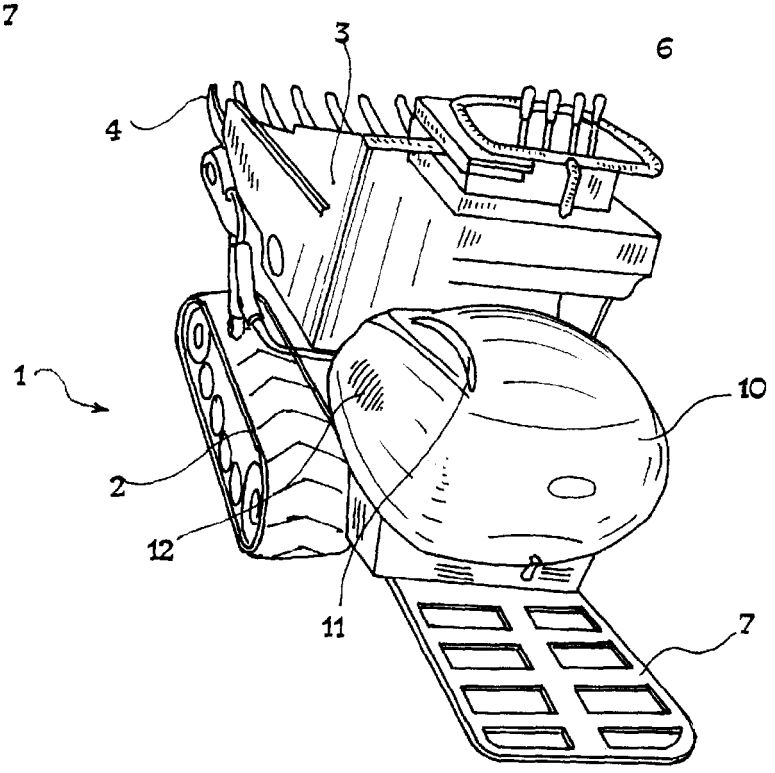

FIG.2

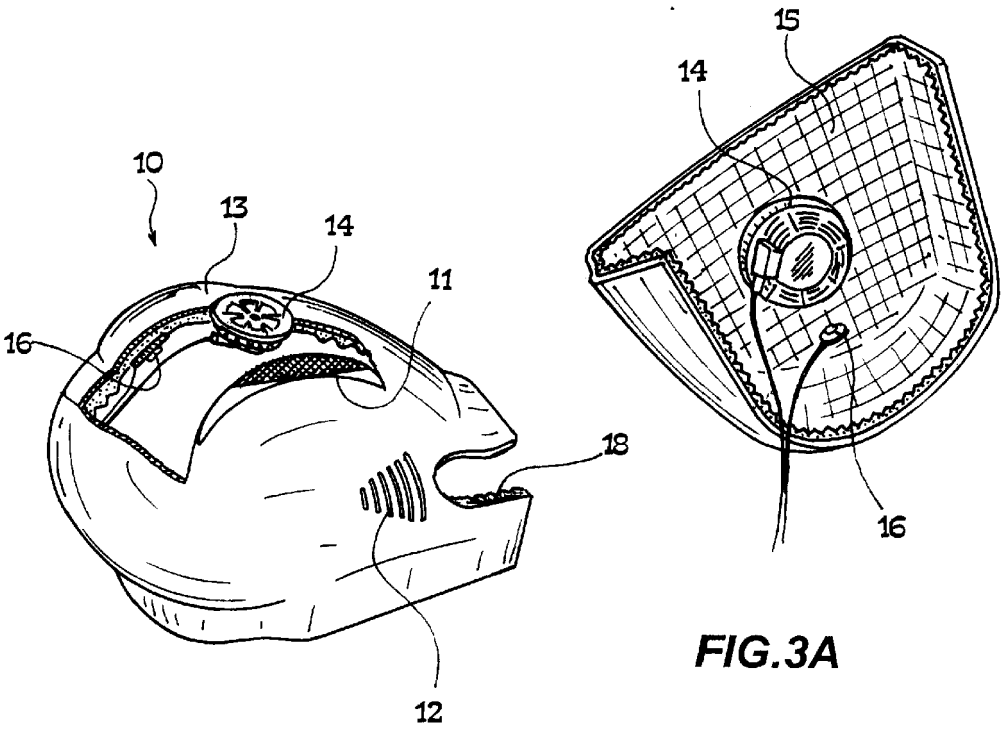

FIG.3A

FIG.3B

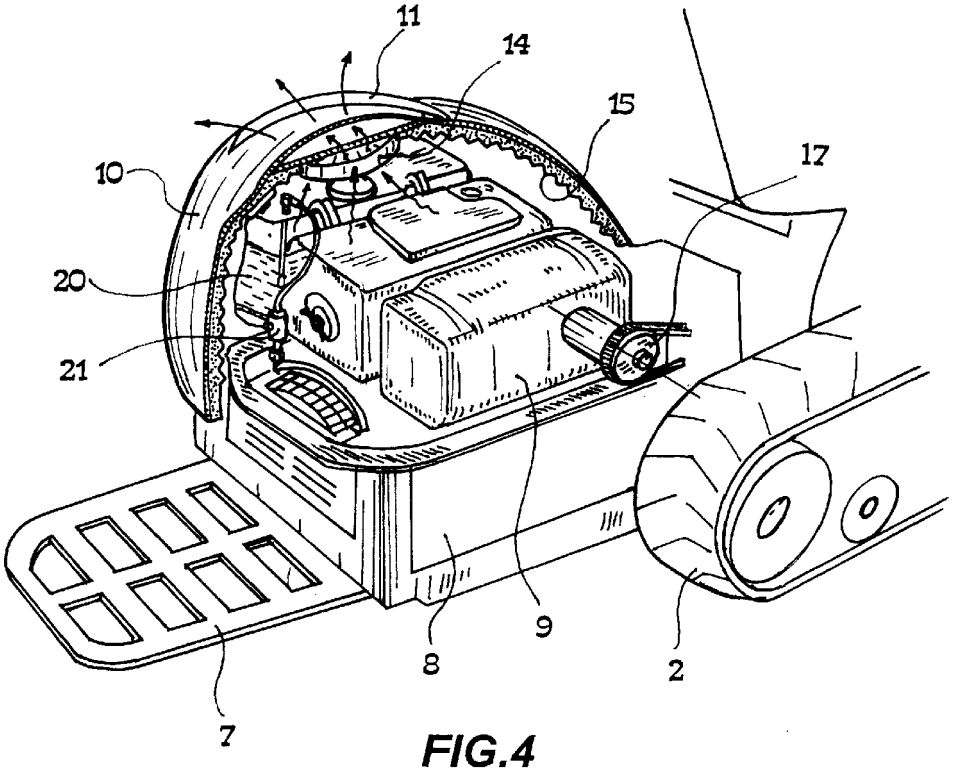

FIG.4