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2,207,368

IGNITION DISTRIBUTOR

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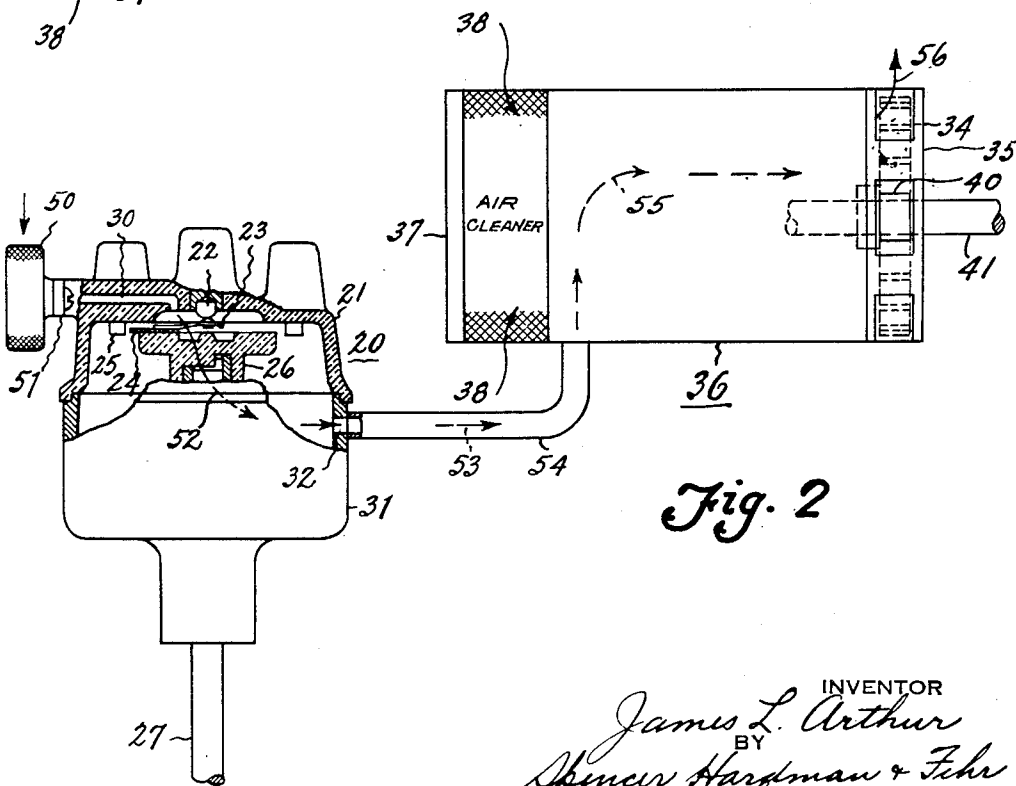
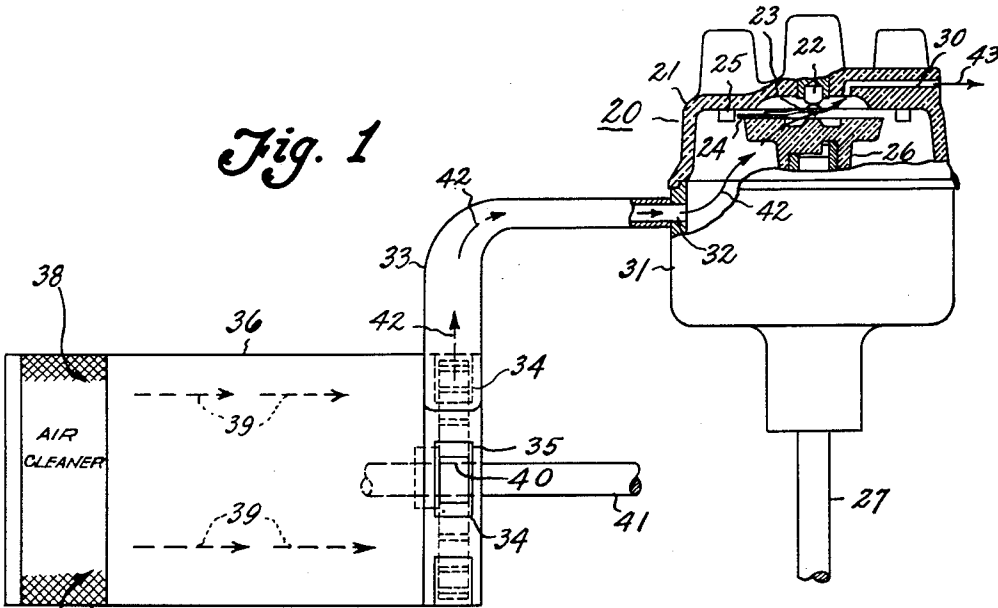


Fig. 2

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IGNITION DISTRIBUTOR

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12 Claims. (Cl. 123—146.5)

This invention relates to ignition distributors used with the ignition apparatus of automotive internal combustion engines.

It is an object of the present invention to prevent the formation of corrosive nitric acid fumes within the distributor. It is understood that the sparks which jump from the distributor rotor to the distributor posts cause the formation of an oxide of nitrogen which will combine with moisture present in the air within the distributor housing to form nitric acid which rapidly corrodes the metallic parts of the distributor.

It is an object of the present invention to provide for the circulation of air from the outside, and through the distributor housing and out again in order to provide a supply of fresh clean air which will sweep out any accumulation of nitrous oxide or nitric acid fumes. In accomplishing this object I take advantage of the circulation of air by the automobile generator air-cooling fan. I provide a duct between the generator and the distributor so that some of the air is caused to circulate by the generator fan and will pass through the distributor housing.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred embodiment of the present invention is clearly shown.

In the drawing:

Fig. 1 is a diagram of one embodiment of my invention in which air is forced from the generator fan through the distributor.

Fig. 2 is a diagram of a second embodiment in which the generator fan sucks air from the outside into the distributor and then into the generator.

Referring to Fig. 1, the distributor 20 includes a head or cap 21 providing a center terminal 22 making contact with a rotor contact spring 23, connected with a segment 24 which rotates past a circular row of distributor posts 25, connected with the engine spark plugs by suitable cables. The rotor segment 24 is carried by a non-conducting rotor block 26 which is driven by the engine through a shaft 27. As the formation of nitric acid fumes takes place in the region nearest the distributor posts where sparking occurs it is desirable to provide for the circulation of air through the space above the rotor block 26. Therefore, the distributor cap 21 is preferably provided with a passage 30, one end of which communicates with the atmosphere and the other with the space within the distributor housing immediately above the rotor block 26.

The distributor cap 21 is supported by and covers the timer housing 31 which encloses the timer contacts not shown. The housing 31 is provided with a side opening 32 connected by duct 33 with one or more of the window openings 34 in the end frame 35 of the automobile generator 36. Generator 36 carries at the opposite end an air cleaner 37 through which air is drawn as indicated by arrows 38, and is circulated as is indicated by arrows 39, by a cooling fan 40 driven by the generator shaft 41, the blades of the fan being adjacent the windows 34. Some of the air expelled from the generator by the fan 40 is caused to flow, as indicated by arrows 42, through the duct 33 and then through the distributor and out into the surrounding air as indicated by arrow 43. The air enters the distributor housing below the rotor block 26 and passes to the region above the rotor block and sweeps any nitrous oxide or nitric acid fumes which might have been formed out through the opening 30. In this way accumulation of any corrosive fumes within the distributor housing is prevented.

In the form of invention shown in Fig. 2 the circulation in air through the distributor takes place in the opposite direction. Before the air passes into the distributor through the passage 30 it first passes through a small air cleaner 50 attached to a boss 51 of the distributor cap 21. The air passes downwardly as indicated by arrow 52 from the space above the distributor rotor block 26 and out through the side opening 32 of the distributor timer cup and then, as indicated by arrow 53, through a duct 54 leading into the interior of the generator 36. The air is caused to circulate by the generator cooling fan 40 as indicated by the arrows 55, and is expelled along with other air sucked through the air cleaner 38 as indicated by the arrow 56.

While the embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A system of ventilating distributors for internal combustion engines ignition apparatus comprising in combination; a distributor having air inlet and outlet passages; and means independent of any moving part of the distributor for causing air to flow into and out of the distributor.

2. A system of ventilating distributors for internal combustion engine ignition apparatus comprising in combination; a distributor having air inlet and outlet passages; means independent of

any moving part of the distributor for causing air to flow into and out of the distributor; and means for filtering the air entering the distributor.

- 5 3. A system of ventilating distributors for internal combustion engine ignition apparatus comprising in combination; a distributor having air inlet and outlet passages; and engine driven means other than the distributor for causing air to flow into and out of the distributor.
- 10 4. A system of ventilating distributors for internal combustion engine ignition apparatus comprising in combination; a distributor having air inlet and outlet passages; an engine driven generator having a ventilating fan for causing circulation of air through the generator; and a duct
- 15 connecting the generator with the distributor so that the operation of the generator fan will cause air to flow through the distributor.
- 20 5. A system of ventilating distributors for internal combustion engine ignition apparatus comprising in combination; a distributor having air inlet and outlet passages; an engine driven generator having a ventilating fan for causing circulation of air through the generator; a duct for connecting the generator with the distributor so that
- 25 the operation of the generator fan will cause air to flow through the distributor; and means for filtering the air entering the distributor.
- 30 6. A system for ventilating distributors for internal combustion engine ignition apparatus comprising, in combination; a distributor having an air inlet and outlet passage, one of the passages being above the rotor and the other below the
- 35 rotor; and means for creating an air current for causing air to flow into and out of the distributor.
- 40 7. A system for ventilating distributors for internal combustion engines ignition apparatus comprising, in combination; a distributor having an air inlet and outlet passage, one of the passages being above the rotor and the other below the rotor; means for creating air current for causing air to flow into and out of the distributor; and means for cleaning the air entering the distributor.
- 45 8. A system of ventilating distributors for internal combustion engine ignition apparatus comprising, in combination; a distributor having air inlet and outlet passages, one of the passages being provided by the wall of the distributor
- 50 adjacent to which a rotor rotates and on one side of the plane of rotation of the rotor and the other passage being on the other side of the plane of

rotation; and means independent of the rotor for causing an air current to flow into and out of the distributor.

9. A system of ventilating distributors for internal combustion engine ignition apparatus comprising, in combination; a distributor having air inlet and outlet passages, one of the passages being provided by that wall of the distributor adjacent to which a rotor rotates and on one side of the plane of rotation of the rotor and the other passage being on the other side of the plane of rotation; means independent of the rotor for causing air to flow into and out of the distributor; and means for filtering the air entering the distributor.

10. A system of ventilating distributors for internal combustion engine ignition apparatus comprising, in combination; a distributor having air inlet and outlet passages, one of the passages being above the plane of rotation of a rotor and the other passage being below the plane of rotation of the rotor; means for creating a current of air; a duct associated with said air creating means and connected with distributor so that air is caused to flow through the distributor by the operation of air creating means; and an air cleaner for cleaning the air before it enters the distributor.

11. A system of ventilating distributors for internal combustion engine ignition apparatus comprising, in combination; a distributor having inlet and outlet passages, one of the passages being above a rotor for the distributor and the other below the rotor; rotating means independent of any moving part of the distributor for causing air to flow into and out of the distributor; and means for cleaning the air before it enters the distributor.

12. A system of ventilating distributors for internal combustion engine ignition apparatus comprising, in combination; a distributor having air inlet and outlet passages, one of the passages being above the rotor and the other passage below the rotor; an engine driven generator having a ventilating fan for causing circulation of air through the generator; a duct connecting the generator with the distributor so that the operation of the generator fan will cause air to flow through the distributor; and means for filtering the air before it enters the distributor.

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