A. D. PARRISH.

VACUUM DEVICE FOR AUTOMOBILE ENGINES.

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1,412,957. Patented Apr. 18, 1922.

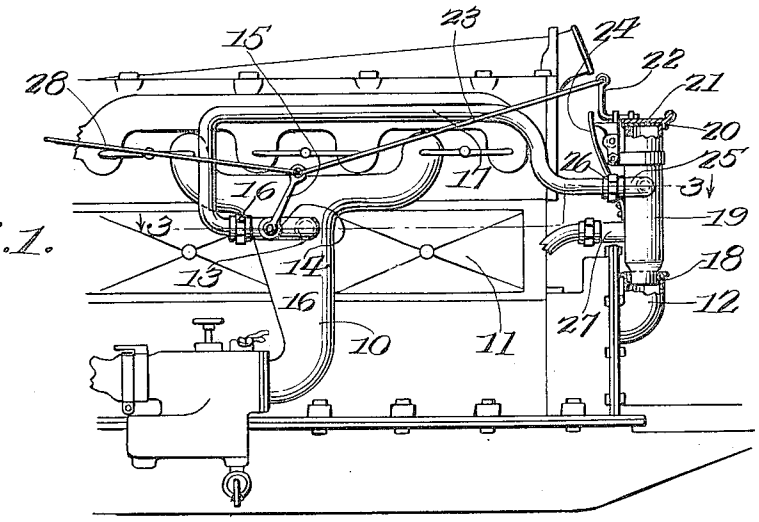


Fig. 1.

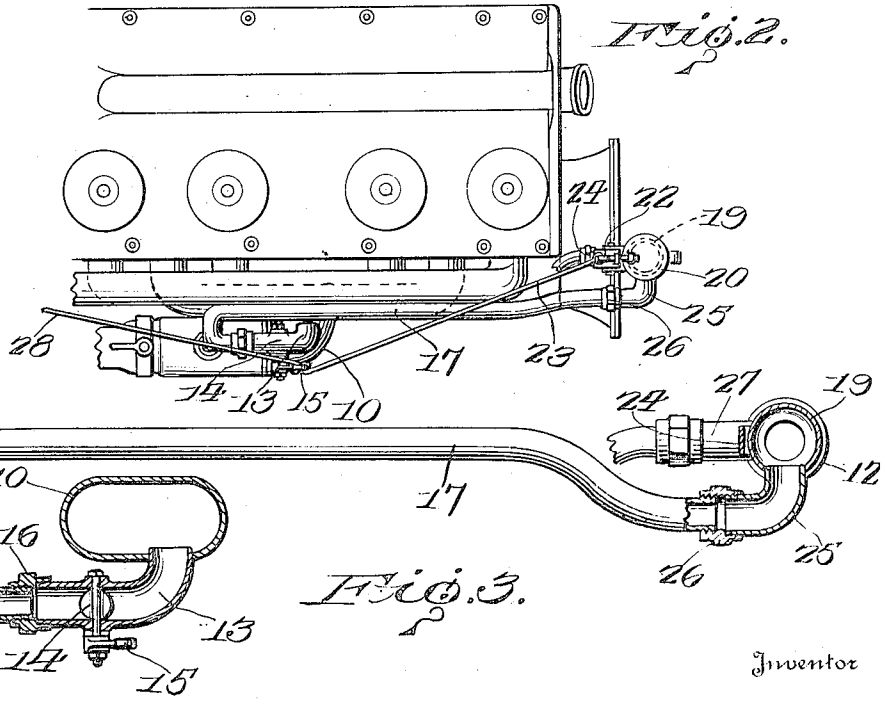


Fig. 2.

Fig. 3.

Witness

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Application filed June 29, 1921. Serial No. 481,361.

To all whom it may concern:

Be it known that I, ALBERT D. PARRISH, a citizen of the United States, residing at Miltonvale, in the county of Cloud, State of Kansas, have invented certain new and useful Improvements in Vacuum Devices for Automobile Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in attachments for explosive engines, and particularly to attachments for the type of explosive engines used on automobiles.

One object of the invention is to provide an attachment for an explosive engine whereby the use of gasoline is economized, and the use of lubricating oil also economized.

Another object is to provide an attachment for an explosive engine whereby the gasoline which leaks past the pistons, into the crank case, in the form of a vapor, is returned or drawn into the intake manifold, together with the vapor of the oil in the crank case, which latter vapor ordinarily escapes through the breather pipe.

Another object is to provide a vacuum attachment by means of which a vacuum is created in the crank case sufficient to prevent any leakage of oil through worm crank shaft bearings; open seams; or even through the pet cock, should said cock be open; while the engine is running.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawing.

In the drawing:

Figure 1 is a side elevation of a portion of an automobile engine showing the invention applied thereto, the breather pipe being shown as broken away.

Figure 2 is a top plan view.

Figure 3 is an enlarged horizontal sectional view through the intake manifold and the pipe which is inserted in the breather pipe of the crank case, showing the vacuum creating nipples and the connecting tube therebetween.

In the accompanying drawing, 10 represents the intake manifold of the engine, and 11 the crank case with its breather pipe 12, in connection with which the invention is used.

Detachably secured in the vertical leg of the intake manifold is an L-shaped nipple 13, and mounted in this nipple, externally of the manifold, is a valve 14, having an upwardly extending stem arm 15. The nipple 13 also has a union 16 for connection with the adjacent end of the small tube or pipe 17, to which reference will be made more particularly hereinafter.

Fitted into the upper end of the breather pipe 12, of the crank case, and rendered air tight by means of the gasket 18, is a vertical tube 19, having on its upper end a closure cap 20, also fitted with an air tight gasket 21. Carried by the hinged portion of the cap is a vertically extending arm 22, and connecting this arm with the before-mentioned arm 15, is a wire 23. A leaf spring 24 serves to maintain the cap in closed position. Secured in the side of this tube 19 is an L-shaped nipple 25, similar to the nipple 13, said nipple having the union 26 for connection with the adjacent end of the before-mentioned tube 17. Also extending into the side of the tube 19 is a valved nipple 27, which may be connected with an oil pump (not shown), or may be completely closed, when the pump is not used.

Connected to the arm 15, and extending to a point within convenient reach of the driver of the automobile, is a wire 28, which, when pulled will close the valve 14 and lift the closure cap 20, and which, when released, permits the cap to close by means of the spring 24, to restore the valve 14.

The valve 14 being open and the cap 20 being closed, with the engine running, the up, or compression stroke of the piston of the engine will create a vacuum in the crank case, which is aided by the suction created in the intake manifold through the pipe 17. Thus should there be any openings in the crank case, where ordinarily oil would leak out, such leakage is prevented because of the absence of pressure on the upper side of the oil in the crank case. On the down stroke of the pistons, the compression of air in the crank case is sucked out of the nipple 25, through the pipe 17, nipple 13, and into the intake manifold, carrying with it the gasoline vapor which has escaped downwardly past the piston rings, into the crank case, as well as the oil vapor of the crank case, which ordinarily escapes through the breather pipe, and is lost. By this arrangement the suction through the carburetor is

somewhat diminished, with the resultant economy in gasoline.

It will be noted that the pipe 17 extends upwardly from the nipple 13, thence alongside of the exhaust manifold, and then down to the nipple 25, with the result that the air which passes through the pipe 17 is raised to a high temperature.

What is claimed is:

1. A vacuum attachment for an explosive engine comprising a conduit connected with and establishing communication between the intake manifold and the breather pipe of the crank case of the engine, and means for simultaneously opening the connection with the manifold and closing the connection with the breather pipe, and vice versa.

2. A vacuum attachment for an explosive engine comprising a tube fitted in the breather pipe of the crank case of an engine, a normally closed closure on the upper end of the tube, a valved nipple secured in the intake manifold of the engine, a valveless nipple secured in the said tube, and connections between the valve of the first-named nipple and the closure whereby the former may be closed simultaneously with the opening of the other, and vice versa.

3. A vacuum attachment for an explosive engine comprising a conduit connected with and establishing communication between the intake manifold and the interior of the crank case of the engine, and means for simultaneously opening the connection with the manifold and closing the connection with the interior of the crank case, and vice versa.

In testimony whereof, I do affix my signature in the presence of two witnesses.

ALBERT D. PARRISH.

Witnesses:

SUSAN B. PARRISH,

MYRTLE S. KRUG.