March 8, 1949. W. WALLACE 2,463,662

COVER FOR THE OUTLET ENDS OF EXHAUST PIPES OF INTERNAL-COMBUSTION ENGINES

Filed Aug. 1, 1947

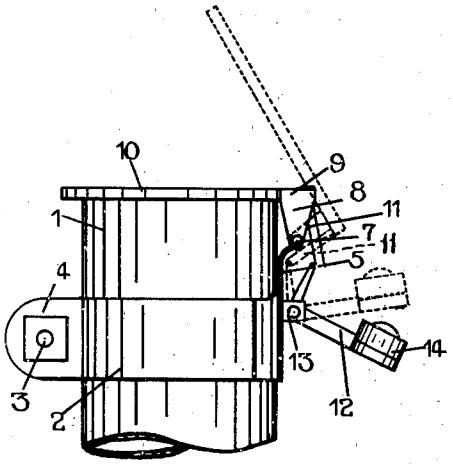


FIG-1-

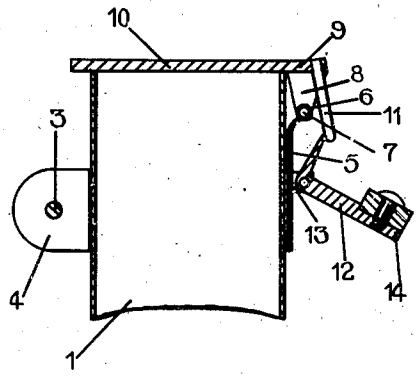


FIG-3-

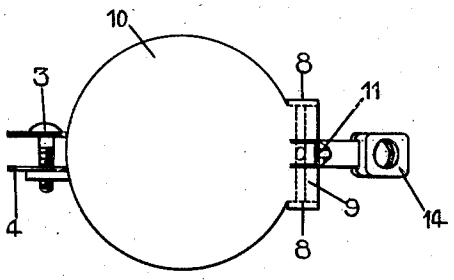


FIG-2

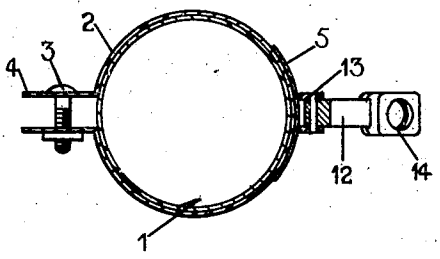


FIG-4-

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COVER FOR THE OUTLET ENDS OF EXHAUST PIPES OF INTERNAL-COMBUSTION ENGINES

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1 Claim. (Cl. 98—59)

1

The invention relates to means for covering or closing the outlet ends of exhaust pipes of internal combustion engines, where same are fitted and positioned so that water and moisture are likely to find their way into said pipes via their outlet ends, and through the pipes into the engines to the detriment of the latter, and their efficiency.

The object of the invention is to provide simple and inexpensive means, capable of being readily attached to exhaust pipes of internal combustion engines, for the purpose of preventing the admission of water and moisture to the engines through said pipes, which means, while fulfilling without attention the function for which they are provided, must necessarily be such as will not interfere with the free escape of exhaust gases from the engine, otherwise the efficiency of the latter would be impaired.

The invention consists, therefore, in providing for the purpose aforesaid, a lid or cover hinged on the exhaust pipe, so as to normally close the outlet end thereof under the action of a counterweight.

The counterweight is such that it permits the lid or cover to open outwards, under the blast of exhaust gases passing through the pipe from the engine and said gases to escape to atmosphere, but causes the lid or cover to close the outlet end immediately the engine stops and the blast of exhaust gases ceases.

Preferably, the counterweight is mounted on one leg of a bell crank lever provided on the device, the other leg of said lever engaging the outer end of an arm on an extension of the lid or cover at the opposite side of the fulcrum thereof, to the lid or cover itself.

The invention will, however, be more particularly described in conjunction with the accompanying drawing, wherein

Figure 1 is an elevation, and

Figure 2 a plan view showing portion of an engine exhaust pipe, with the improved cover fitted thereto, while

Figures 3 and 4 are a sectional elevation and a sectional plan view respectively of the parts appearing in Figures 1 and 2.

In the drawing 1 represents portion of a vertical exhaust pipe having its outlet end uppermost, while 2 is a clamp of flexible material such

2

as strap or sheet metal of a suitable guage, adapted to be secured around and to the pipe 1 by a bolt 3 or the like passed through its lugs 4, the fastening provided by the bolt 3 and the lugs 4 enabling the clamp 2 to be fitted to exhaust pipes of varying diameters.

The clamp 2 is formed with a bracket 5 thereon, the latter being rolled at its upper edge to provide a bearing 6 for a pin 7 also entered in downturned lugs 8, one at each side of an extension 9 of the lid or cover 10, shaped so that it closes the outlet from the pipe 1 when sitting on the upper end thereof.

An arm 11 extends downwards and slightly outwards from the extension 9 of the lid 10 to which it is fixedly secured. While a bell crank lever 12 pivoted at 13 to the clamp 2 has one leg weighted as at 14 and the other leg engaged inside the outer or lower end of the arm 11.

Normally the lid or cover 10 by reason of its own weight and under the action of the counterweight 14, sits on the upper end of the pipe 1 and closes the opening therein.

The total weight of the lid or cover 10 and the counterweight 14, is such that it is not sufficient to withstand the blast of exhaust gases which, when the engine is started up, pass from the latter through the pipe 1 towards the outlet end thereof, so that when the engine is running the lid or cover 10 is forced by the exhaust gases off the end of the pipe 1, as indicated dotted in Figure 1, and said gases are enabled to pass freely to atmosphere.

Immediately the engine is stopped and exhaust gases cease to pass through the pipe 1, the lid or cover 10 descends by reason of its own weight and under the action of the counterweight 14, on to the end of the pipe 1, and closes the opening therein, thereby preventing water or moisture or other matter from entering the pipe.

By reason of the simple clamping means described and illustrated, the device is enabled to be readily fitted to, and adjusted on an exhaust pipe, for the purpose set forth, and can be just as easily removed therefrom, if necessary.

What I do claim and desire to obtain by Letters Patent of the United States of America is:

A cover for the outlet end of the exhaust pipe of an internal combustion engine comprising a clamp to be fastened about the exhaust pipe

substantially adjacent the end thereof, a bearing portion on said clamp, a lid hinged on said bearing portion, an arm depending from said lid adjacent said bearing portion, a bell crank lever being pivotally supported by said clamp having a weight on one arm and another arm engaging said depending arm whereby said lid is normally disposed to close said outlet end and action of the exhaust pressure effects an opening of said lid against gravity and said weight.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,350,102	Fairbanks	May 30, 1944
2,420,700	Curphy	May 20, 1947
2,421,838	Harmon	June 10, 1947