March 14, 1939. H. FRANKLIN 2,150,157

DUSTPROOF VENTILATOR

Filed Aug. 17, 1936

FIG. 1.

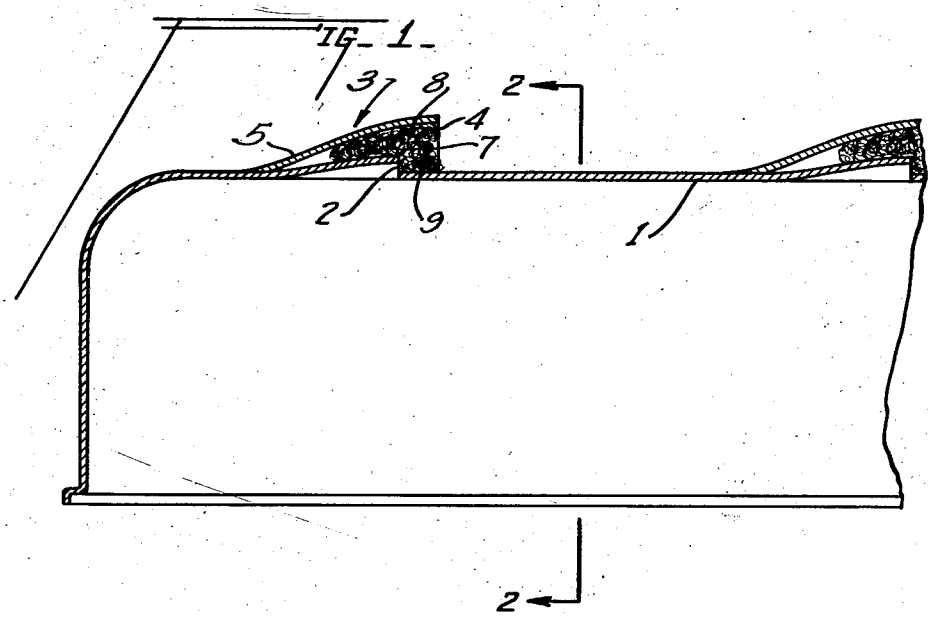


FIG. 3.

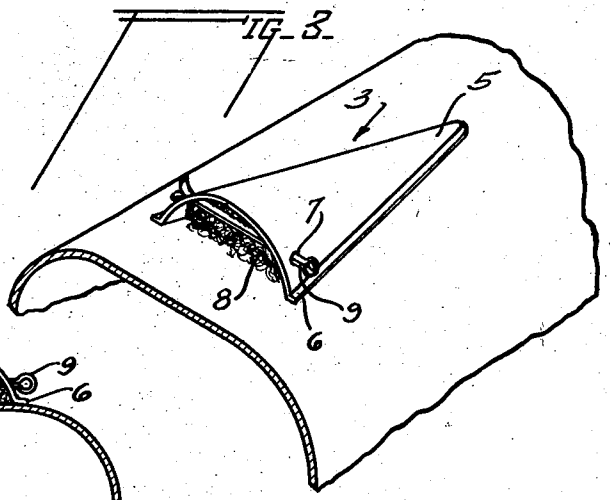
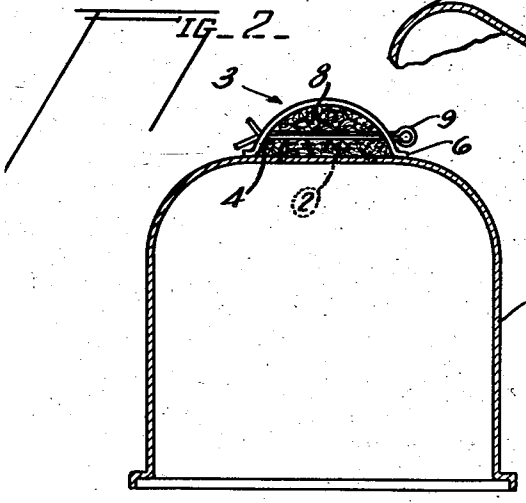


FIG. 2.



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UNITED STATES PATENT OFFICE

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DUSTPROOF VENTILATOR

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Application August 17, 1936, Serial No. 96,462

4 Claims. (Cl. 123—198)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

My invention relates to air cleaning ventilators and more particularly to this type ventilator for preventing foreign matter, carried by the air, from entering the interior of engines, yet one which will allow proper ventilation for carrying off superfluous vapors and gases.

Many overhead valve engines at present are equipped with a rocker arm enclosure to prevent dust and other foreign matter from coming in contact with the rocker arms, and later passing into the cylinders and crank case. The enclosure, however, must be ventilated to allow the escape of unburned gases, and the like. This is usually done by the provision of several louvers in the top of the enclosure, opening toward the rear of the engine. In windy, sandy, and dusty territory, however, foreign matter carried by the air enters the louver openings and does great injury to the working parts of the engine.

It is the main object of my invention to provide a ventilator which may be used either as an attachment for engines of present design, or which may be made a part of the engine at the time of manufacture, and which will prevent dust from entering the engine at the ventilation outlet.

Other objects are to provide a ventilator which may be used to ventilate the crank case of an engine as well as the rocker arm enclosure; which, in fact, may be used on any enclosure which it is desired to keep free from foreign particles during ventilation; and, which will be efficient in accomplishing all the purposes for which it is intended.

With these and other objects in view as will more fully appear hereinbelow, my invention consists in the construction, novel features, and combination of parts hereinafter more fully described, pointed out in the claims hereto appended, and illustrated in the accompanying one-sheet drawings, of which,

Figure 1 is a side sectional view of two of my ventilators installed on a valve enclosure, only a portion of the enclosure being shown;

Fig. 2 is a front view of the device, looking into its open end, installed on a valve enclosure shown in section, the section being taken along the line 2—2 of Fig. 1; and,

Fig. 3 is a perspective view of the device installed on a valve enclosure, the latter being only fragmentarily shown.

Like characters of reference designate like parts in all the figures.

It is understood that various changes in the form, proportion, size, shape, weight, material and other details of construction, within the scope of my invention may be resorted to without departing from the spirit or broad principle of my invention and without sacrificing any of the advantages thereof; and it is also understood that the drawing is to be interpreted as being illustrative and not restrictive.

It is hereby understood and agreed that the invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes without payment to me of any royalty thereon.

The inventive idea involved is capable of receiving a variety of mechanical expressions one of which, for the purpose of illustrating the invention, is shown in the accompanying drawing.

Numeral 1 designates a rocker arm enclosure, but as stated above it is understood that my device may be installed on any enclosure which is to be ventilated. Numeral 2 designates one type opening over which my device may be placed. The device itself, designated as a whole by numeral 3, is suitably fastened preferably by welding, to the outer wall of the enclosure over the outlet 2. The air outlet 4 is preferably positioned a distance from the outlet 2 and faces opposite the direction in which the vehicle normally travels. The outlet 4 is considerably larger than the opposite closed end 5. The wall tapers from the outlet 4 to the end 5, and an integral flange 6 is provided to facilitate fastening the device securely to an enclosure.

In the side walls, adjacent the outlet 4 and approximately midway between the flange 6 and the top of the outlet 4, are provided oppositely disposed through perforations 7.

After the ventilator is in position on the enclosure a filter 8 comprising a quantity of "steel wool", "copper wool", hair, or the like, is placed in its interior so that such material completely covers the outlet 2, and loosely fills the interior up to the outlet 4. To hold said filtering material within the interior, a cotter key 9 is then inserted in the perforations 7 across the outlet 4, and its ends suitably bent to prevent its working out of position. Before being placed in position the filtering material 8 is preferably oiled so as to increase its efficiency in removing foreign matter from the air.

With the filtering material 8 in position it will be readily seen that outside air passing over the device from the end 5 toward the outlet 4 will cause a partial vacuum, and cause waste gas, vapor, and the like, to be drawn from the interior of the enclosure through the outlet 2, through

the filtering material 8, and out through the outlet 4. Any dust laden air which may enter the enclosure through the outlet 2 must first pass through the filter 8, which of course removes the foreign particles from the air before it actually does enter the enclosure.

Obviously, the invention is susceptible of embodiment in forms other than that which is illustrated in the accompanying drawing and described herein, and applicable for uses and purposes other than as detailed, and I therefore consider as my own all such modifications and adaptations and other uses of the form of the device herein described as fairly fall within the scope of my invention.

Having thus described my invention, what is claimed and desired to be secured by Letters Patent, is:

1. A ventilator construction for an opening comprising a hood structure rigidly secured to a wall surrounding said opening, said structure having its open rear end arcuately curved, and being tapered from said open end toward said wall and terminating in a closed end adjacent the wall; a filter housed in said open end over said opening composed of suitable fibrous oil bearing material, and holding means through oppositely disposed perforations in the walls of said structure for retaining said filter material in position.

2. In combination with an engine having an outlet perforation through which it is desired to ventilate the engine, a device of the class described comprising a tapered hood portion open only at one end, having its main body portion rigidly secured and sealed against the portion of said engine immediately adjacent said outlet, and having its open end opening in a direction opposite to the normal direction of travel of the engine, whereby air passing said opening causes a suction from the interior of said engine through the outlet and through said hooded portion; and a mass of fibrous material substantially loosely filling said hooded portion so as to shut off any direct communication between the interior of said engine and the outside atmosphere.

3. In a ventilator construction for an engine, a metallic hood structure rigidly secured to a wall over an opening therein, said structure having an arcuately curved open rear end and tapering from said open end toward said wall, and terminating in a closed end adjacent the wall; a filter housed in said hood structure and over said wall opening composed of an oil laden fibrous material; and a pin passing through oppositely disposed perforations in the walls of said hood structure adjacent its open end for retaining said filter in position within said hood structure and over said wall opening.

4. In combination with an engine having an outlet perforation through which it is desired to ventilate the engine, a device of the class described comprising a tapered hood portion open only at one end, having its main body portion rigidly secured and sealed against the portion of said engine immediately adjacent said outlet, and having its open end opening in a direction opposite to the normal direction of travel of the engine, whereby air passing said opening causes a suction from the interior of said engine through the outlet and through said hooded portion; a mass of fibrous material substantially loosely filling said hooded portion so as to shut off any direct communication between the interior of said engine and the outside atmosphere, and a pin passing through oppositely disposed perforations in the walls of said hood structure adjacent its open end for retaining said filter in position within said hood structure and over said wall opening.

HARRISON FRANKLIN.