Dec. 8, 1931. F. C. HORN 1,835,872

MUFFLER

Filed March 21, 1930

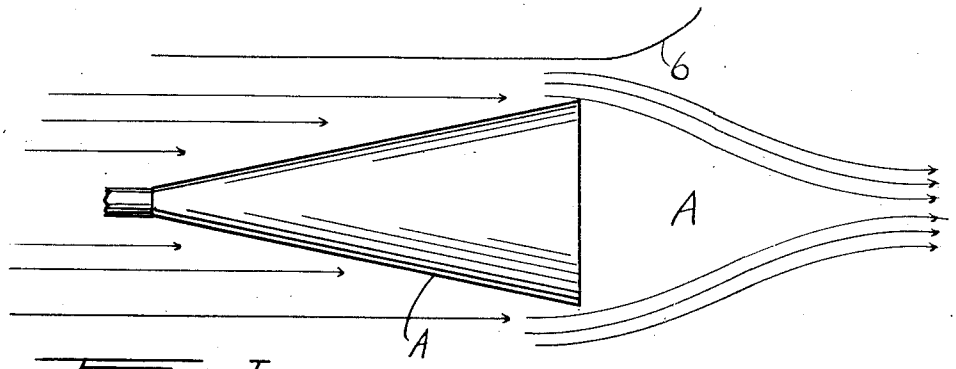


Fig. I.

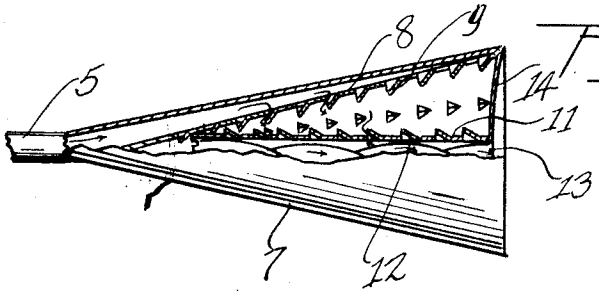


Fig. II.

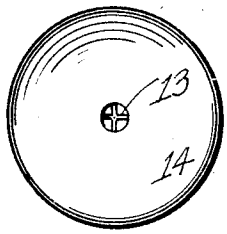


Fig. III.

INVENTOR.

F. C. HORN

BY Victor J. Evans

ATTORNEYS.

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UNITED STATES PATENT OFFICE

FLOYD C. HORN, OF SAN LEANDRO, CALIFORNIA

MUFFLER

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This invention relates to improvements in mufflers and has particular reference to a muffler for use in the silencing of an internal combustion engine as employed by motor vehicles.

Another object of the present invention is to produce a muffler wherein the power of the engine will be increased.

A further object is to produce a muffler wherein better scavenging of the engine will be effected.

A still further object is to produce a muffler wherein the exhaust gases will be cooled and contracted before passing to the atmosphere thus tending to reduce the noise.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure I is a side elevation of my muffler as the same would appear attached to the exhaust pipe of a motor, illustrating air currents there around.

Figure II is a side elevation of my muffler partly broken away to show the interior thereof, and

Figure III is a rear elevation thereof.

The ordinary muffler employed in internal combustion engines usually consists of a cylindrical chamber having a plurality of baffles therein for the purpose of breaking up and cushioning the pulsating exhaust from the engine. This type of muffler has a tendency to cause back pressure which reduces the power of the engine and also prevents efficient scavenging

I have therefore produced a muffler which when moved through the atmosphere, as for instance, when suspended beneath a moving motor vehicle, the air currents passing thereabout will cause the vacuum to the rear of the muffler and will therefore cause to suck out of the muffler the gases entering the same.

In the accompanying drawing wherein for the purpose of illustration is shown a preferred embodiment of my invention the numeral 5 designates the end of an exhaust pipe positioned beneath a motor vehicle, a portion of the body of which is shown at 6. To the exhaust pipe 5, I attach a cone-shaped shell 7 having its small end connected to the pipe 5 and having its large end directed towards the rear of the motor vehicle.

Within this shell is positioned a perforated cone 8 having a plurality of inwardly extending projections 9 pressed from the material of the cone. The large end of the perforated cone abuts the large end of the shell and is sealed thereto in any convenient manner.

Centrally positioned within the perforated cone is a perforated tube 11 which has outwardly extending projections 12. Within the tube is a four sided spiral partition 13. An end plate 14 closes the shell and cone in the tube 11 (best shown in Figure III).

The passage of gas from the engine to the atmosphere is designated by the arrows of Figure II. The passage of the muffler through the atmosphere causes the air to strike the cone and to pass there-around so as to cause a vacuum at the point A directly behind the muffler. This vacuum serves to assist in drawing the exhaust gases through the muffler and at the same time the air currents hitting the outside of the shell 7, tend to chill the gases within the muffler thus reducing their exhaust noises.

The passage of the exhaust gases through the shell 8 and then through the top 13 and spirally results in the pulsations being so broken up as to be practically inaudible when reaching the atmosphere.

It will thus be seen that I have produced a very simple device which will accomplish all of the objects herein set forth.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the shape, size, material and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:—

In a muffler adapted to be attached to a

motor vehicle and comprising a cone shaped shell secured to the muffler pipe of the motor vehicle and having its larger end extending away from the direction of normal motion of the motor vehicle, a cone positioned within said first mentioned cone and having its large end sealed to the large end of said shell, said second mentioned cone being perforated, the material adjacent said perforations being bent inwardly with respect to the axis of said cone, a plate crossing the large end of said shell, a perforated tube extending into said second mentioned cone and opening thru said plate, said tube having perforations therein, the material adjacent said tube perforations being bent toward the inner wall of said second mentioned cone.

In testimony whereof I affix my signature.

FLOYD C. HORN.