No. 737,443. PATENTED AUG. 25, 1903.

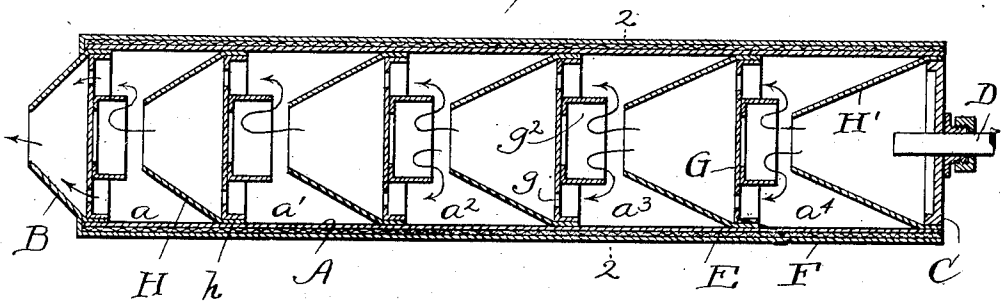
L. P. MOOERS.

MUFFLER.

APPLICATION FILED JULY 16, 1902.

NO MODEL.

Fig. 1,



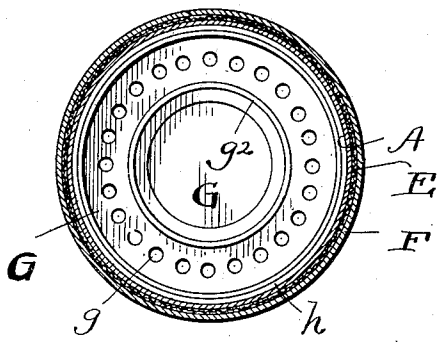


Fig. 2,

Witnesses.
E. B. Gilchrist
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Inventor
Louis P. Mooers,
By his Attorneys,
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 737,443. Patented August 25, 1903.

UNITED STATES PATENT OFFICE.

LOUIS P. MOOERS, OF CLEVELAND, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO PEERLESS MOTOR CAR COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF WEST VIRGINIA.

MUFFLER.

SPECIFICATION forming part of Letters Patent No. 737,443, dated August 25, 1903.

Application filed July 16, 1902. Serial No. 115,767. (No model.)

To all whom it may concern:

Be it known that I, LOUIS P. MOOERS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Mufflers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

If in operating engines of different types the exhaust is permitted to flow directly into the atmosphere, a considerable puffing noise results. This is very objectionable, especially in connection with explosion-engines which are used on motor-vehicles; and it is the object of this invention to obviate that difficulty by a peculiar form of muffler set forth in the following description and claims and illustrated in the drawings.

Referring to the drawings, Figure 1 is a longitudinal cross-section showing the device, and Fig. 2 is a vertical section on line 2 2 of Fig. 1.

Referring to the parts by letters, A represents a casing closed at one end by a funnel-shaped ring B and at the other end by a head C, in which is secured the exhaust-pipe D, leading from the engine. The outside of this casing is wrapped with asbestos E or other suitable non-heat-conducting material and has a jacket F around the outside of this asbestos.

The inside of the casing A is provided with several chambers a, a', a^2, a^3, and a^4, which decrease in size from the inlet end of the casing to the outlet. These chambers a a', &c., are formed by transverse partitions G, which have suitable perforations g therein and cup-shaped baffles g^2. These partitions are severally of such a size that they fit tightly within a sleeve-like end portion h of a funnel-shaped ring H. These rings correspond in width to the chamber in which they are placed, so that their small ends, from which the gas is discharged, are in close proximity to the cup-shaped baffles g^2 and the force of the discharge from the ring will be taken up within these baffle-cups g^2. A funnel-shaped ring H′ is provided for the head C at the inlet end of the casing.

The operation of the device is as follows: As the discharge comes from the engine the volume of the gas is concentrated by the ring H′ and directed into the first baffle-cup on the first partition, where it rolls back in the direction indicated by the arrow into the chamber and thence passes through the small holes g into the inside of the next funnel-shaped ring in the next chamber, where it is again concentrated into the baffle-cup of the second partition.

The operation just described is continued, and the gas passes from the larger chamber in the first instance, when it contains the highest amount of heat, to other chambers of smaller dimensions, which are at that time of sufficient size to accommodate the charge that has become cooled. The operation is continued until the gas is finally discharged from the funnel-shaped ring B at the end into the atmosphere, the noise of the exhaust having been spent by the several compressions of the gas and in the circuitous route the gas has taken in its progress.

This device is designed particularly for use on automobiles which are operated by explosive-engines; but it will be readily seen that it can be applied to any sort of engine and perform the same function.

Having described my invention, I claim—

1. In a muffler, the combination with the casing, of partitions separating the casing into chambers decreasing in size from the inlet to the outlet, rings for concentrating the charge within said casing and baffles for operating in connection with said rings for baffling the charge, substantially as described.

2. In a muffler, the combination with the casing, of partitions separating the casing into chambers of different sizes, rings for concentrating the charge within said casing, said rings having openings increasing in size from the inlet to the outlet and baffles operating in connection with said rings for baffling the charge, substantially as described.

3. In a muffler, the combination with the casing, of perforated partitions within said casing separating it into chambers decreasing in size toward the outlet-opening, funnel-shaped rings within each of said chambers for concentrating the charge, and baffles operat-

ing in connection with said ring, substantially as described.

4. In a muffler, the combination with the casing, of partitions separating the casing into chambers decreasing in size from the inlet to the outlet, a funnel-shaped ring within each of said chambers for concentrating the charge, said rings being provided with openings increasing in size from the inlet to the outlet and baffles operating in connection with said rings, substantially as described.

5. In a muffler, the combination with the casing, of perforated partitions within said casing separating it into chambers decreasing in size toward the outlet-opening, funnel-shaped rings within each of said chambers for concentrating the charge, and cup-shaped baffles operating in connection with said ring, substantially as described.

6. In a muffler, the combination with the casing, of a head secured in said casing and carrying the inlet-pipe, partitions within said casing for separating the same into chambers decreasing in size from the inlet to the outlet, having suitable perforations in the same and carrying cup-shaped baffles, a funnel-shaped ring within each one of said chambers for concentrating the charge into said cup-shaped baffles, rings provided with openings increasing in size from the inlet to the outlet of said casing and a suitable jacket for said casing, substantially as described.

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

LOUIS P. MOOERS.

Witnesses:

B. W. BROCKETT,

ALBERT H. BATES.