

J. H. SAMES.
MUFFLER.
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1,045,614.

Patented Nov. 26, 1912.

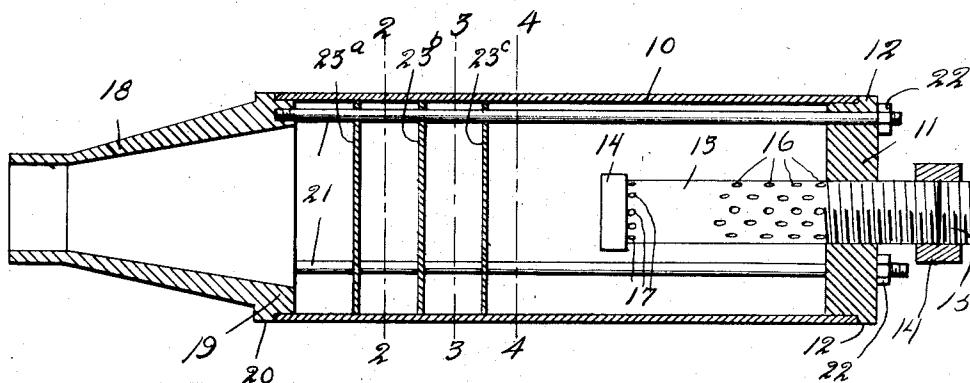


Fig. 1.

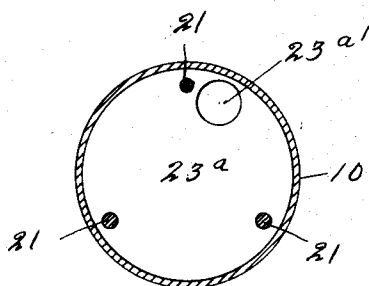


Fig. 2.

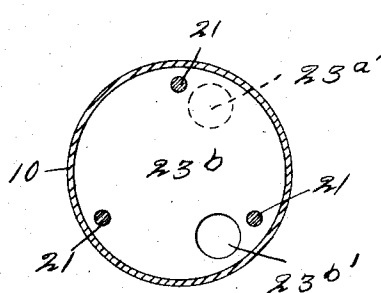


Fig. 3.

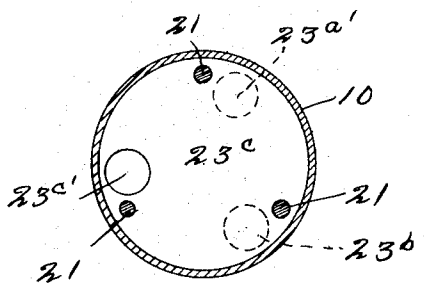


Fig. 4.

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MUFFLER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN H. SAMES, a citizen of the United States, residing at Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Mufflers, of which the following is a specification.

This invention relates to new and useful improvements in mufflers and is particularly designed to provide a device of this character which may be attached to the exhaust pipe of the engine in such a manner that the products of combustion may be emitted without the usual accompanying noise of the explosions.

In carrying out the present invention it is one of the objects to eliminate compression within the muffler casing, which, under ordinary circumstances, reduces the power obtained from the engine, due to the back pressure.

With the above and other objects in view, my invention consists in the construction, combination, and arrangement of parts, all as will hereinafter be more fully described, illustrated and claimed, wherein:—

Figure 1 is a central longitudinal section of the muffler constructed in accordance with the present invention. Fig. 2 is a vertical section taken along line 2—2 of Fig. 1. Fig. 3 is a similar view taken along line 3—3 of Fig. 1. Fig. 4 is likewise a vertical section taken along line 4—4 of Fig. 1.

The muffler forming the subject matter of the present invention comprises a tubular funicular casing having a head mounted in one terminal thereof, said head being pierced by an inlet pipe, which is threaded into said head and is perforated upon the inner terminal thereof, the outer terminal of said pipe being adapted to engage the exhaust pipe of the engine. A funicular discharge opening is secured in the outer terminal of said casing by means of a plurality of rods, threaded into said funicular member, and piercing the head aforesaid. A plurality of baffle plates are mounted upon these rods and are pierced by openings which are staggered for the purpose of diverting the passage of the gases from a direct course. In carrying out the present invention a muffler casing 10 constitutes the main body portion thereof, and is interposed between the inner terminal of the exhaust pipe of the engine and the exterior atmosphere. A head 11 is mounted upon the interior of

the inner terminal of the casing 10, said head being encircled by a flange 12, which is adapted to rest against the inner terminal of said casing, when the top of the head 11 is placed in its operative position. An inlet pipe 13 is concentrically threaded into the head 11, and has its inner terminal closed by the cap 14. The outer terminal of this pipe 13 is connected by a union 14^a to the exhaust pipe 15 of the engine. The body of the inlet pipe 13 adjacent to the inner face of the head 11 is provided with a plurality of perforations 16, while the terminal thereof adjacent to the cap 14 is pierced by the aligned perforations 17, said perforations 16 and 17 providing a means whereby the gases or products of combustion passing from the exhaust pipe 15 into the supply pipe 13 may escape into the casing 10. A funicular discharge pipe or tube mounted at the opposite end of the casing 10. The inner terminal of this funicular discharge pipe or tube is provided with a straightened portion 19, which is reduced to be received within the terminal of the casing forming a flange or bead 20 which bears against the terminal of said casing. The inner terminal of this funicular discharge tube or pipe has a plurality of rods 21 threaded therein, which extend through the casing 10 adjacent to the walls thereof and project through the head 11. The outer terminals of these rods 21 are threaded to receive the nuts 22 which bear against the outer surface of the head 11 and clamp the same in its operative position.

A plurality of baffle plates illustrated three in number 23^a, 23^b, and 23^c, are mounted upon the rods 21 adjacent to the funicular discharge pipe or member 18. The baffle plate 23^a is provided with a circular opening 23^{a'} therein, located adjacent to the circumference thereof, while the baffle plate 23^b is provided with a similar opening 23^{b'}, and the baffle plate 23^c is provided with an opening 23^{c'}, said openings in the baffle plates being arranged as illustrated in Fig. 4, in such a manner that the same are in no way in direct alinement, causing the gases to pass through the baffle plates in a staggered course.

From the foregoing, it will clearly be seen that, as gas is fed into the casing 10, it will pass through the perforations 16 and 17 into the pipe 13 and pass thence through the openings 23^{a'}, 23^{b'}, 23^{c'}, in the baffle plates 23^a, 23^b, and 23^c, in a course such as

heretofore described, and thence out of the funicular discharge tube or member 18. It will clearly be seen that the construction of the funicular discharge opening provides
5 a means for the exhaustion of the gases, which is of greater diameter than the inlet, and thus prevents the creation of pressure or the accumulation of gas within the casing, and thereby eliminates the back pressure
10 which has been so common in mufflers now in use. This construction readily eliminates any decrease in the power from the engine and increases the utility, speed, and operation thereof.

15 Having thus fully described my invention, what I claim is new and desire to secure by U. S. Letters Patent, is:—

20 1. In a muffler, the combination with a casing, of a head provided with an aperture, a flange formed with the head and engaging the casing, an inlet pipe provided with a plurality of perforations adjacent to the head mounted in the head and projecting into the casing, a cap on the inner terminal

of the inlet pipe adjacent to other perfora- 25
tions in the inlet pipe, a funicular discharge member on the end of the casing opposite to the head, a plurality of rods connecting said head and said discharge member, and a plurality of baffle plates mounted upon the 30
rods.

2. In a muffler, the combination with a casing, of a funicular discharge member at one terminal thereof, a head located in the inlet terminal thereof, and three baffle 35
plates transversely of the casing and adjacent to the funicular discharge, each plate provided with a single aperture larger than the inlet adjacent to its periphery, the several apertures spaced one hundred and 40
twenty degrees radially from the aperture in the adjacent plate.

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

JOHN H. SAMES.

Witnesses:

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