

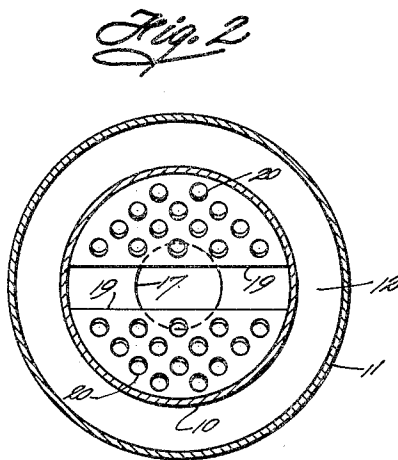
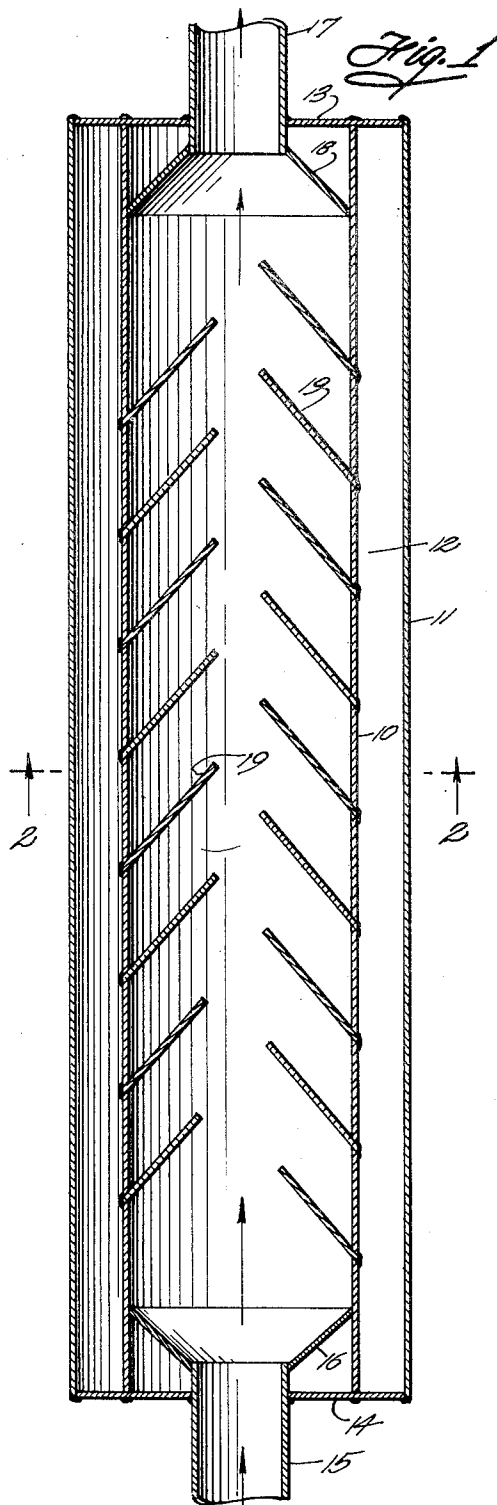
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MUFFLER WITH INCLINED PARTITIONS

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MUFFLER WITH INCLINED PARTITIONS

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3 Claims. (Cl. 181—48)

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This invention relates to improvements in mufflers.

An object of the invention is to provide an improved muffler of relatively simple and durable construction that can be advantageously used on the exhaust pipe of Diesel engines as well as gasoline internal combustion engines which will effectively silence the exhaust and which is highly advantageous in that there is a minimum of back pressure developed by the muffler on the engine.

More specifically, an object of the invention is to provide an improved muffler consisting of a chamber or tube having an inlet and an outlet with rows of perforated partitions or baffles secured to the opposite sides thereof which extend inwardly towards each other in staggered relation to each other but terminate short of the center of the chamber so as to leave a free and unobstructed passage from the inlet to the outlet.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a vertical section through the improved muffler embodying the present invention; and

Fig. 2 is a sectional view taken substantially upon the line 2—2 upon Fig. 1.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the improved muffler comprises a cylindrical tube 10 surrounded by a concentrically arranged cylindrical shell 11, the space between the tube and shell indicated at 12 constituting a relatively dead air space. End plates 13 and 14 close the end of the tube and shell respectively. In the end plates there is an inlet passage provided by an exhaust pipe 15 which has secured thereto a frusto-conical member 16 that widens until it contacts the interior of the tube. In a similar manner, the outlet passage 17 extends through the end plate 13 and has a frusto-conical member 18 secured thereto. On opposite sides of the tube 10 there are formed inclined slots into which are inserted perforated baffles or partitions 19. These baffles or partitions are welded in place on the exterior of the tube 10 and extend towards each other from the opposite sides of the tube. Those partitions or baffles which are arranged on one side of the tube are disposed in staggered relation to the partitions or baffles on the other side of the tube. All of

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the partitions or baffles may or may not be perforated as indicated at 20 and while they extend towards each other they terminate short of the longitudinal central axis through the tube thus leaving a clear and unobstructed path or line of travel from the inlet 15 to the outlet 17. The spacing between the adjacent edges of those partitions or baffles which are most adjacent the inlet 15 is preferably somewhat greater than the spacing between the adjacent edges of opposed partitions near the outlet.

The operation of the muffler is substantially as follows: Exhaust gases which enter the muffler through the inlet 15 are directed back and forth across the muffler from one partition or baffle to its opposed partition or baffle and may readily expand into the pockets formed between adjacent partitions or baffles. As the gases move through the muffler a somewhat of a whirling action may be developed in these various pockets. At all events I find that a muffler constructed in this manner is highly efficient in silencing the exhaust from the engine and creates a minimum of back pressure on the engine due to the free unobstructed passage through the muffler. A muffler of this character when installed on Diesel-powered trucks has the effect of greatly reducing if not entirely eliminating the objectionable smoke issuing from the engine. While the plates or partitions are preferably perforated this is not essential as they may in some instances be imperforate.

Various changes may be made in the details of construction without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. A muffler comprising a hollow elongated body providing an inlet and an outlet and being otherwise imperforate, partitions secured directly to the inner walls of the body only on two opposite sides thereof, the partitions on each side being equally spaced from one another and parallel and sloping inwardly toward the outlet and terminating short of the central axis of the body so as to leave a straight unobstructed passage from the inlet to the outlet, the partitions on one side of the body being staggered with relation to the partitions on the opposite side, the partitions on each side terminating approximately on the planes if extended of opposed partitions whereby there is provided pockets which guide exhaust gases from one side of the body into pockets on the other side back and forth along the body from the inlet to the outlet.

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2. A muffler comprising a hollow elongated body providing an inlet and an outlet and being otherwise imperforate, partitions secured directly to the inner walls of the body on opposite sides thereof, the partitions on each side being parallel and sloping inwardly toward the outlet and terminating short of the central axis of the body so as to leave a straight unobstructed passage from the inlet to the outlet, the partitions on one side of the body being staggered with relation to the partitions on the opposite side, the partitions on each side terminating approximately on the planes if extended of opposite partitions whereby there is provided pockets which guide exhaust gases from one side of the body into pockets on the other side back and forth along the body from the inlet to the outlet.

3. A muffler comprising a hollow elongated body providing an inlet and an outlet and being otherwise imperforate, partitions secured directly to the inner walls of the body only on two opposite sides thereof, the partitions on each side being equally spaced from one another and parallel and sloping inwardly toward the outlet and ter-

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minating short of the central axis of the body so as to leave a straight unobstructed passage from the inlet to the outlet, the partitions on one side of the body being staggered with relation to the partitions on the opposite side.

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