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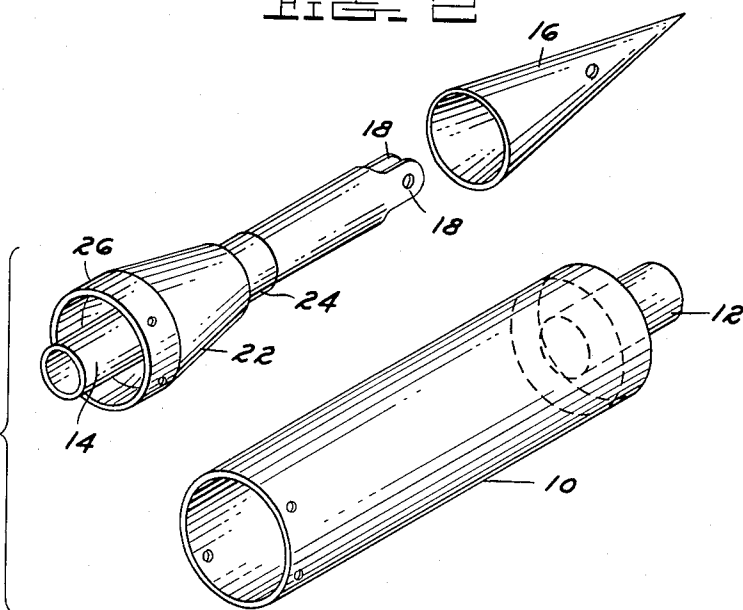
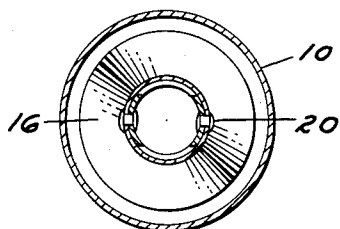
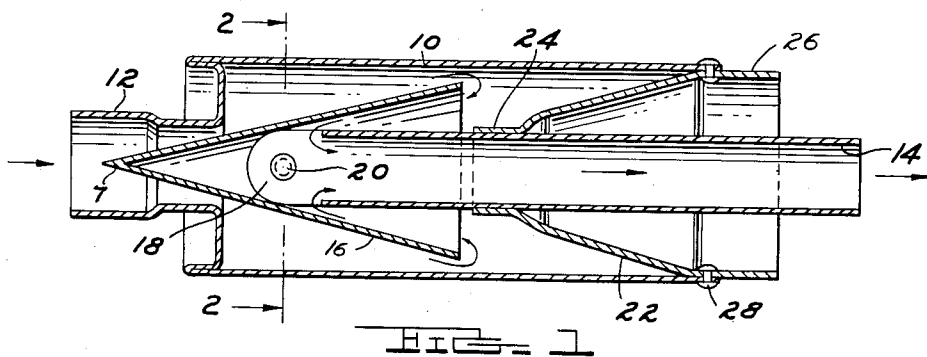


FIG. 3

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3 Claims. (Cl. 181—53)

This invention relates to an improved muffler and particularly to a muffler such as is employed in connection with an internal combustion engine.

An object is the provision of such a muffler for the engine of a motor vehicle which muffler will be simple, inexpensive, and effective to accomplish its intended purpose.

Another object is the provision of such a muffler which is so constructed that it effectively minimizes the noise of the exhaust without exerting undesirable back pressure thereupon.

A further object is the provision of a muffler as hereinabove set forth wherein the exhaust gas is caused to follow a circuitous path in such a manner as to damp out the noise of its discharge but wherein the flow is relatively smooth and even.

A meritorious feature is the provision of a muffler of the character described composed of a minimum number of simple parts which are easily assembled together to form the muffler.

Another meritorious feature is the provision of a muffler of the character described which can be manufactured at a nominal cost and which occupies a relatively small space whereby it might be installed in the motor compartment eliminating the necessity of mounting the same underneath the chassis.

Another meritorious feature is the provision of a muffler as set forth wherein the exhaust gas is caused to flow through a casing and over a cone-shaped baffle and then through the interior of the cone-shaped baffle for ultimate exhaust through a discharge pipe which discharges through the opposite end of the casing.

Other objects, advantages, and meritorious features will more fully appear from the following description, claims, and accompanying drawing, wherein:

Fig. 1 is a sectional view through a muffler embodying this invention;

Fig. 2 is a cross sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a perspective showing the various component parts which go to make up the muffler assembly separated one from the other.

In the drawings the arrows indicate the flow of waste gas as it enters the muffler and is discharged therefrom. The muffler comprises a casing or the outer cylindrical shell 10 which, like the other parts of the muffler, may be formed of metal or of any suitable material. Such casing is provided at one end with an inlet pipe 12. This pipe is here shown as formed integrally with the casing but it is obvious that it might be formed of a separate piece secured thereto. This inlet pipe 12 is of reduced diameter as compared with the diameter of the casing and is adapted to be coupled with an exhaust leading from the engine.

There is an exhaust or discharge pipe 14 which is shown as of substantially the same diameter as that portion of the inlet pipe 12 which enters the casing. This discharge pipe 14 is supported within the casing rear-

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wardly of the inlet pipe 12 and is shown as extending outwardly beyond the discharge end of the casing. A suitable tail pipe or the like might be coupled with the projecting end of the discharge pipe 14.

5 There is a tapered tubular baffle 16 which is supported within the casing between the inlet pipe 12 and the discharge pipe 14. The baffle shown is of a conical shape and closed at its reduced end 7. Its pointed reduced end is shown in Fig. 1 as extending into the inlet pipe 12.

10 The enlarged rear end of the baffle 16 surrounds and overlaps the adjacent end of the discharge pipe 14 as shown in Fig. 1. This baffle 16 is supported by the discharge pipe and the discharge pipe is supported by a second baffle.

15 The discharge pipe is shown as provided with opposed complementary extensions or ears 18 and suitable connections such as rivets 20 or the like secure the cone-shaped baffle 16 to these ears as illustrated in Figs. 2 and 3. It will be seen that the tubular baffle 16 is so fastened to the ears 18 of the discharge pipe 14 that a flow passageway is provided through the interior of the baffle 16 into the end of the discharge pipe between the ears.

25 The discharge pipe itself and the first-mentioned baffle are supported within the interior of the casing 10 by a second baffle 22. This baffle 22 is a tubular tapered baffle generally in the form of a truncated cone. The small end of this baffle encircles and is connected with a discharge pipe 14 at 24 as shown in Figs. 1 and 3. The opposite flaring end 26 of this baffle 22 is connected by rivets 28 or the like with the discharge end of the casing 10. The second baffle 22 therefore constitutes a closure that extends from the inner wall of the casing 10 forwardly to the discharge 14 as illustrated particularly in Fig. 1.

35 In operation it will be seen that exhaust gas from the engine enters the casing through the inlet pipe 12. It flows over the tapered end of the baffle 16 rearwardly within the casing and is directed by the baffle 22 to flow forwardly into the cone-shaped baffle 16. It will be seen that the cone-shaped baffle 16 overhangs for a substantial portion of its length the discharge pipe 14 and the exhaust gas entering this baffle flows downwardly therethrough and into the discharge pipe between the ears 18. Such exhaust gas is then discharged through the opposite end of the pipe 14 as illustrated in Fig. 1. The flow of the gas is sufficiently smooth that a minimum of back pressure is set up within the baffle itself. The gas stream, however, is so directed that undesirable noise is effectively silenced without the provision of a large number of gas-intercepting baffles.

50 What I claim is:

1. A muffler comprising, in combination, a tubular casing, an inlet pipe of reduced diameter as compared with the casing leading into one end of the casing, a discharge pipe of reduced diameter as compared with the casing supported therein spaced rearwardly from the inlet pipe and providing a discharge from the opposite end of the casing, a cone-shaped baffle supported within the casing between the inlet pipe and the discharge pipe and with the pointed end of the cone extending into the inlet pipe spaced therefrom providing a passageway about the cone within the inlet pipe, the opposite flaring end of the cone surrounding and overlapping the adjacent end of the discharge pipe spaced therefrom providing a passageway within the cone about the discharge pipe communicating with the interior of the discharge pipe, and a second baffle of a tapered tubular shape supported within the casing spaced rearwardly of the first-mentioned baffle and surrounding the discharge pipe and with the reduced end of said second baffle projecting toward the first-mentioned baffle within the casing encircling and

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connected with the discharge pipe rearwardly of the rear end of the first-mentioned baffle and with the large end of said second baffle projecting toward the discharge end of the casing and connected therewith and sealed there-against.

2. A muffler comprising a tubular casing, an inlet pipe of reduced diameter as compared with the casing leading to one end thereof, a discharge pipe of reduced diameter supported within the casing with its forward end spaced rearwardly from the rearward end of the inlet pipe and with its rearward end extending through the rear end of the casing, a tapering tubular cone-shaped baffle closed at its small end supported within the casing between the inlet pipe and the discharge pipe with the small closed end of the baffle pointed into and extending partially into the inlet pipe but spaced therefrom providing a passageway therebetween, the large end of said cone-shaped baffle overlapping in spaced relation the adjacent end of the discharge pipe providing a passageway therebetween, said discharge pipe having portions connected with and supporting the cone-shaped baffle forwardly of the discharge pipe within the casing, a second tubular tapered baffle in the shape of a truncated cone mounted within the casing rearwardly of the first-mentioned baffle and pointed toward the first-mentioned baffle, said second baffle having its small forward end encircling and connected with the discharge pipe and supporting the discharge pipe within the casing, the large end of the second baffle sealing against and connected with the rear end of the casing and supported therein supporting in turn the discharge pipe within the casing.

3. A muffler comprising, in combination, a tubular generally uniform diameter casing closed at its forward end and provided with an inlet pipe of less diameter than the casing extending into the forward end of the casing,

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a discharge pipe of reduced diameter as compared with the casing supported therein with its forward end spaced rearwardly from the inlet pipe and with its rear end extending outwardly through the rearward end of the casing, a truncated cone-shaped baffle supported within the casing with its large end sealed against the inner wall of the casing adjacent to its rear end and connected therewith and with the forward end of said truncated cone-shaped baffle encircling the discharge pipe and connected therewith within the casing and spaced intermediate between the forward end and the rearward end of the casing and supporting said discharge pipe within the casing, a second baffle of a cone shape and closed at its small end mounted within the casing between the forward end of the discharge pipe and the intake pipe leading into the casing and with the pointed closed end of said cone-shaped baffle projecting into the intake pipe but spaced therefrom providing a passageway therebetween, the large end of said second cone-shaped baffle overlapping the forward end of the discharge pipe spaced therefrom and providing a passageway therebetween whereby gas entering the casing through the intake pipe about the forward end of the second cone-shaped baffle may flow into the large end of the cone-shaped baffle and forwardly to enter the discharge pipe, the forward end of the discharge pipe provided with ears extending forwardly and connected with the second cone-shaped baffle supporting the same within the casing.

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