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3,404,750

COMBINATION TAILPIPE SPOUT AND SILENCER
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ABSTRACT OF THE DISCLOSURE

A combination tailpipe spout and silencer is provided by a louvered gas flow tube which fits inside of a chrome-plated cylindrical housing that is formed at one end for clamping to a tailpipe and has portions engaging the tube to form a high frequency sound attenuation chamber surrounding the louvered portion of the tube.

This invention relates to exhaust systems for automotive type internal combustion engines, and in particular refers to a combination silencer and tailpipe spout.

Many automotive drivers and automobile owners purchase chrome-plated tailpipe spouts to attach to the tailpipes in order to furnish an attractive appearance for their automobiles.

It is an object of the present invention to provide an attractive tailpipe spout which also incorporates means for silencing relatively high frequencies in an automobile exhaust system. The unit is designed especially for use in exhaust silencing systems wherein the lower frequencies are not fully attenuated are emitted to give a "power" sound to the vehicle.

The invention accomplishes this and other objects by means of a construction in which an ornamental housing contains a perforated gas conduit opening into a closed chamber between the housing and the conduit. The combination of the perforations or louvers in the gas tube and the chamber acts to attenuate high frequency noises and roughness in the exhaust gases.

The invention is illustrated in the accompanying drawings, wherein:

FIGURE 1 is a side elevation, somewhat schematic, showing an exhaust system embodying the tailpipe spout of this invention;

FIGURE 2 is an enlarged cross section along line 2—2 of FIGURE 1;

FIGURE 3 is a longitudinal section through the tailpipe spout of FIGURE 1 on an enlarged scale, and

FIGURE 4 is a cross sectional element along line 4—4 of FIGURE 3.

In the drawings, the internal combustion engine 1 has an exhaust manifold 2 which empties exhaust gases into the exhaust pipe 3 which delivers gas to a main muffler 5 which in turn delivers gas to the tailpipe 7. At the end of the tailpipe 7 is mounted a tailpipe spout 9 constructed in accordance with the invention. It will be recognized that this exhaust system is of the so-called hot rod or sport variety since the muffler 5, as seen in FIGURE 2, is packed with sound absorbent material 15 and has a louvered straight through flow tube 11 which communicates through the louvers 13 to the packing 15 confined between the tube and the shell 17 of the muffler. This unit permits low frequency sound to pass through it without substantial attenuation but removes much of the intermediate and high frequency sounds in the gas. Thus, low power notes are permitted to pass through the exhaust system and escape to the atmosphere.

It is fairly common for drivers of vehicles having mufflers 5 of the type illustrated in FIGURE 2 to attach chromium plated tailpipe spouts to the end of the tail-

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pipe 7 as by means of a clamp 19. In the present invention the tailpipe spout 9 also serves to remove some of the high frequency noises and thus serves a double function in that it improves the overall quality of the exhaust silencing system.

The tailpipe spout 9 comprises a housing 21 which is reduced in diameter on its inlet end 23 and slotted at 25 so that it may be attached by the clamp 19 to the end of the tailpipe 7. The other end of the housing is open to the full diameter and terminates in a diagonal plane 27. Mounted within the housing 21 is a louvered gas flow pipe 29 which is mounted at one end in the bushing section 23 of the housing and its other end 33 is supported by means of pinched down sections 35 formed by making gathers or folds 37 in the metal forming the housing 21. The space 39 between the shell 21 and the gas flow tube 29 therefore constitutes an annular closed chamber that communicates through the louvers in the gas flow tube with the gas passing through the spout 9. This provides an acoustic connection between the tube and chamber and enables the very high frequency sounds and roughness to be attenuated as they are absorbed into the chamber 39.

Modifications may be made in the structure shown without departing from the spirit and scope of the invention.

We claim:

1. A combination tailpipe spout and silencer comprising a cylindrical housing having a first reduced diameter portion at one end forming an inlet and a substantially larger diameter portion at the other end forming an outlet, said reduced diameter portion having slot means therein to facilitate clamping thereof to a tailpipe, a straight gas flow tube supported in said reduced diameter portion and extending coaxially of the housing and having an inner diameter substantially the same as that of the reduced diameter portion, said housing having a second reduced diameter section embracing and supporting said gas flow tube at a point spaced longitudinally from said first reduced diameter section, said two reduced diameter sections defining a closed chamber around the gas flow tube, said gas flow tube being perforated in said chamber whereby said chamber acts to attenuate high frequency sounds in gas passing through the gas flow tube, said gas flow tube terminating inwardly of the outlet end of the housing, the outlet end of said housing terminating in a diagonal plane spaced longitudinally from the end of said gas flow tube.

2. A device as set forth in claim 1 wherein said gas flow tube is provided with a large number of louvers opening into said chamber and forming said perforations.

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