July 28, 1959 M. H. KURAS 2,896,739

MOTOR VEHICLE MUFFLER

Filed Aug. 12, 1957

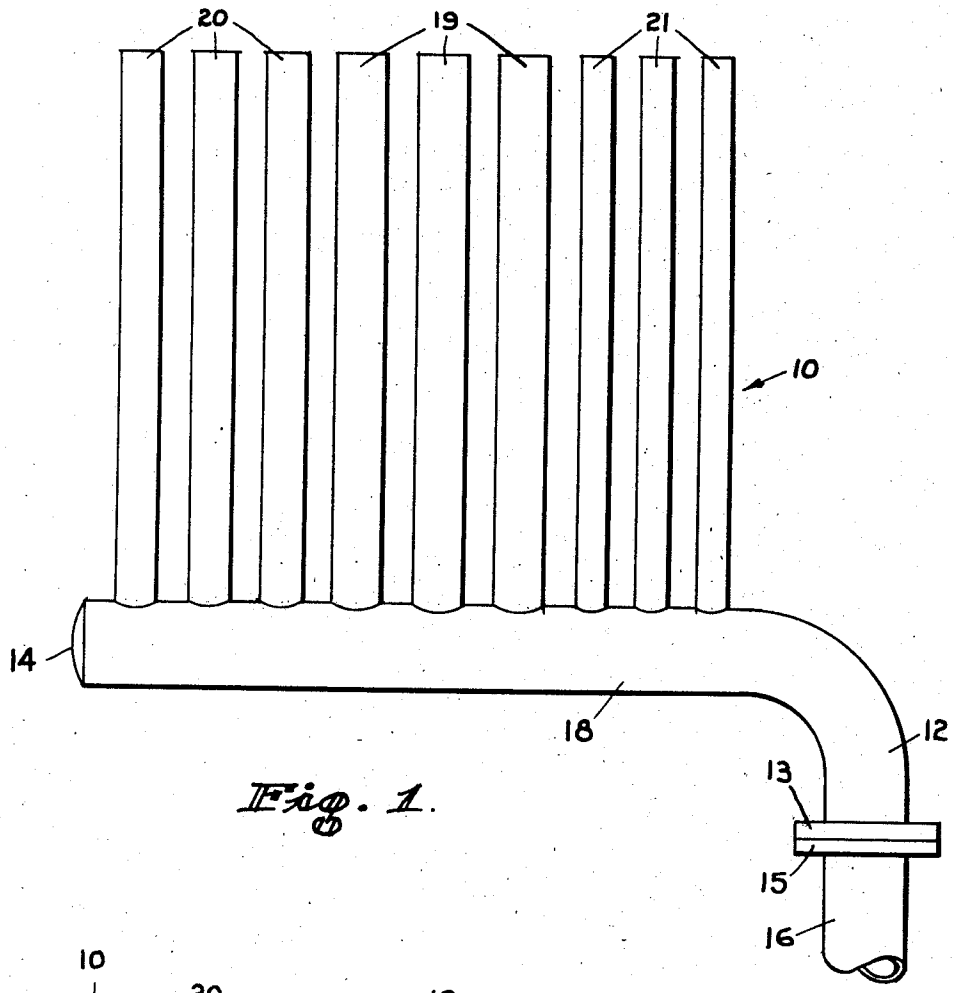

Fig. 1.

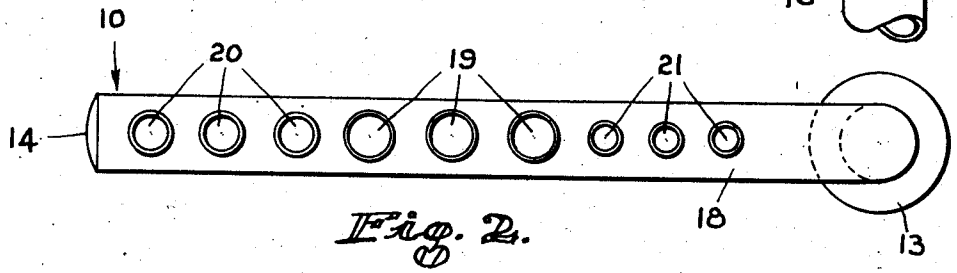

Fig. 2.

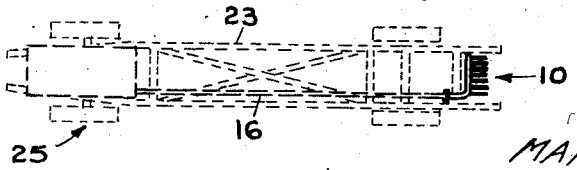

Fig. 3.

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3 Claims. (Cl. 181—46)

This invention relates to automotive vehicles and more particularly to a muffler for the exhaust system thereof.

It is an object of the present invention to provide a novel muffler assembly for the exhaust pipe of an automotive vehicle which will effectively reduce the volume of noise ordinarily emanating therefrom in a simple and efficient manner.

Another object of the present invention is to provide a muffler having a plurality of groups of different size exhaust pipes so proportioned that the decibel rating of each group will differ with the other groups and the resulting varying wave lengths of the sound waves will neutralize each other so as to diminish such noise.

Other objects of the invention are to provide a muffler bearing the above objects in mind which is of simple construction, has a minimum number of parts, is inexpensive to manufacture and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in conjunction with the accompanying drawing, in which:

Figure 1 is a top plan view of a muffler made in accordance with the present invention;

Figure 2 is an end elevational view of the device shown in Figure 1; and

Figure 3 is a diagrammatic top plan view of the muffler shown in Figures 1 and 2 in operative use.

Referring now more in detail to the drawing, a muffler **10** made in accordance with the present invention is shown to include an L-shaped exhaust pipe having a relatively short base leg **12** that has an attachment flange **13** adjacent the free end thereof. This flange **13** is adapted to be integrally connected to the mating flange **15** carried by the exhaust pipe **16** of the automotive vehicle. This L-shaped exhaust pipe is also provided with an elongated leg **18** which is closed at the outer end by means of a closure member **14** and which is provided with a plurality of groups of exhaust pipes **19, 20, 21** of different sizes. The longitudinal axes of all of these pipes lie in substantially a common plane which also contains the longitudinal axis of the elongated leg **18** of the L-shaped pipe. The central group of exhaust pipes **19** is of the largest diameter, while a slightly smaller group of pipes **20** are disposed at one side thereof and a still smaller group of pipes **21** disposed at the opposite side thereof. The diameters of the various groups of pipes are chosen so that the decibel rating of each group will differ and the varying wave lengths emanating therefrom will neutralize each other and thus diminish the sound of the exhaust gases. For example, satisfactory results are obtained when the relationship between the respective groups of pipes **20, 19, 21** is in the order of 3 to 5 to 4, or ⅜ inch, ⅝ inch, or ½ inch, respectively. However, any other suitable sizes may be chosen so long as the relationship between the respective pipes is substantially of this order.

As is shown in Figure 3, the discharge ends of the pipes **19, 20, 21** are faced rearwardly toward the rear end of the vehicle **25** and the entire muffler may be supported upon the chassis **23** of the vehicle in a conventional manner along with the main exhaust pipe **16**. Since the combined cross sectional area of all of the discharge pipes **19, 20, 21** is greater than the cross sectional area of the conduit **18**, there is little or no back pressure in the system.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. A muffler for attachment to the exhaust pipe of an internal combustion engine of an automotive vehicle comprising, in combination, an L-shaped conduit having a base leg and an angularly related leg closed at its outer end, and a plurality of substantially horizontally outwardly extending fully open discharge pipes of diverse sizes associated with said angularly related leg, said discharge pipes being divided into a plurality of groups of pipes of different cross sectional area, all of the pipes in each group being of the same cross sectional area.

2. The combination according to claim 1, wherein the group of pipes of largest cross sectional area is disposed adjacent to the mid portion of said angularly related leg, and the other of said groups are arranged at each side of said largest pipes.

3. The combination according to claim 2, wherein the cross sectional area of all of said pipes is greater than the cross sectional area of said vertical leg.

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