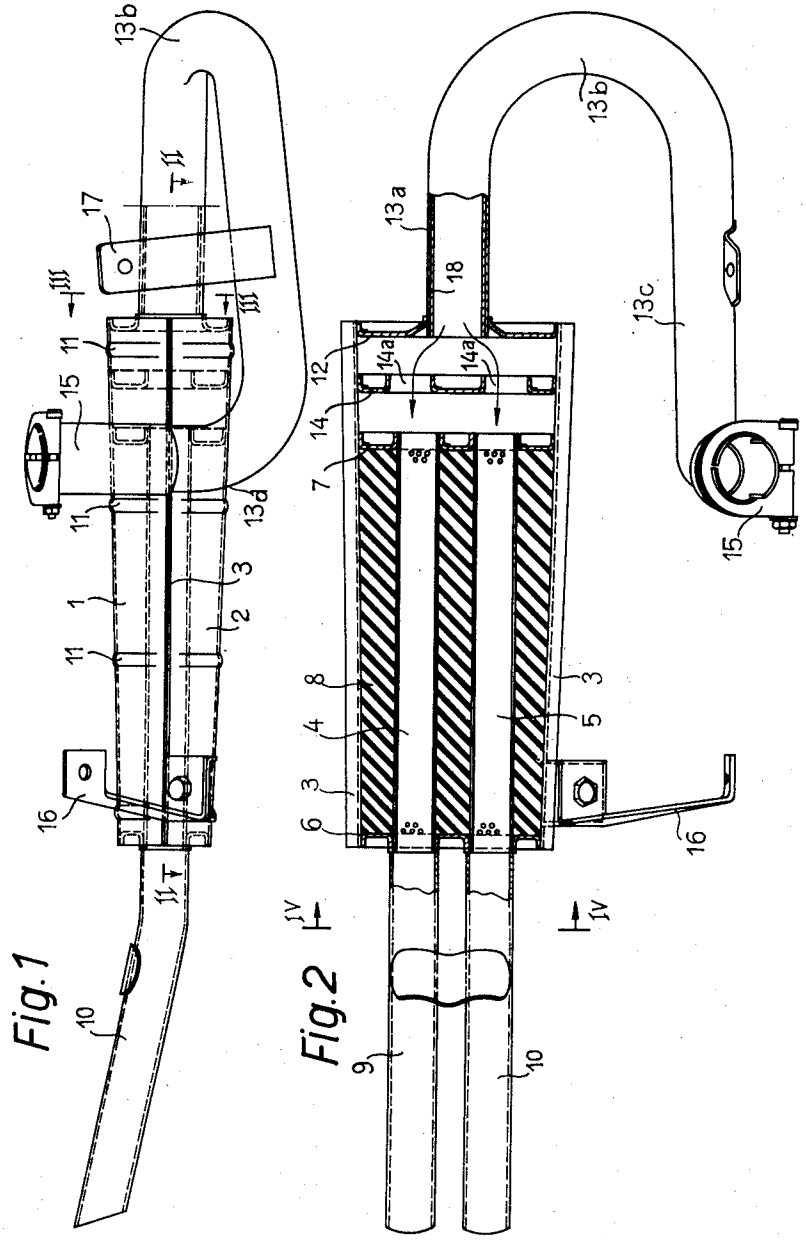
Aug. 4, 1959 C. ABARTH 2,897,909

SILENCER FOR MOTOR VEHICLES

Filed June 16, 1958 2 Sheets-Sheet 1



Aug. 4, 1959 C. ABARTH 2,897,909

SILENCER FOR MOTOR VEHICLES

Filed June 16, 1958 2 Sheets-Sheet 2

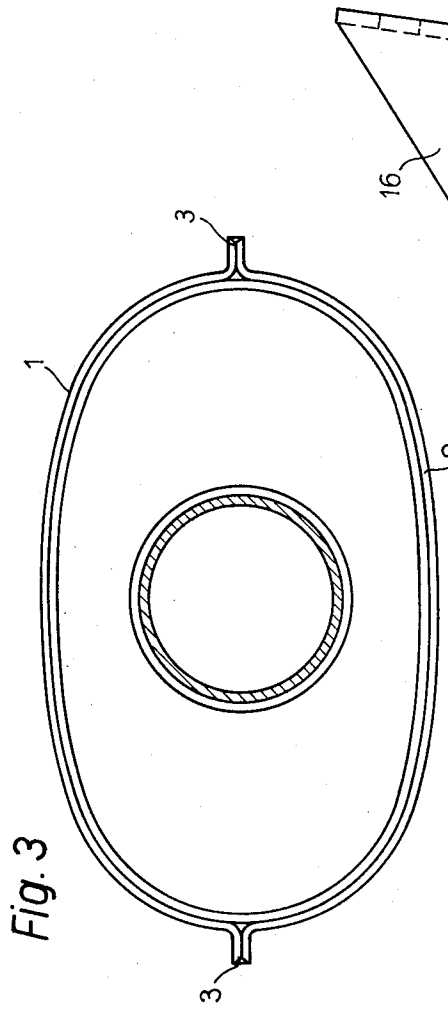


Fig. 3

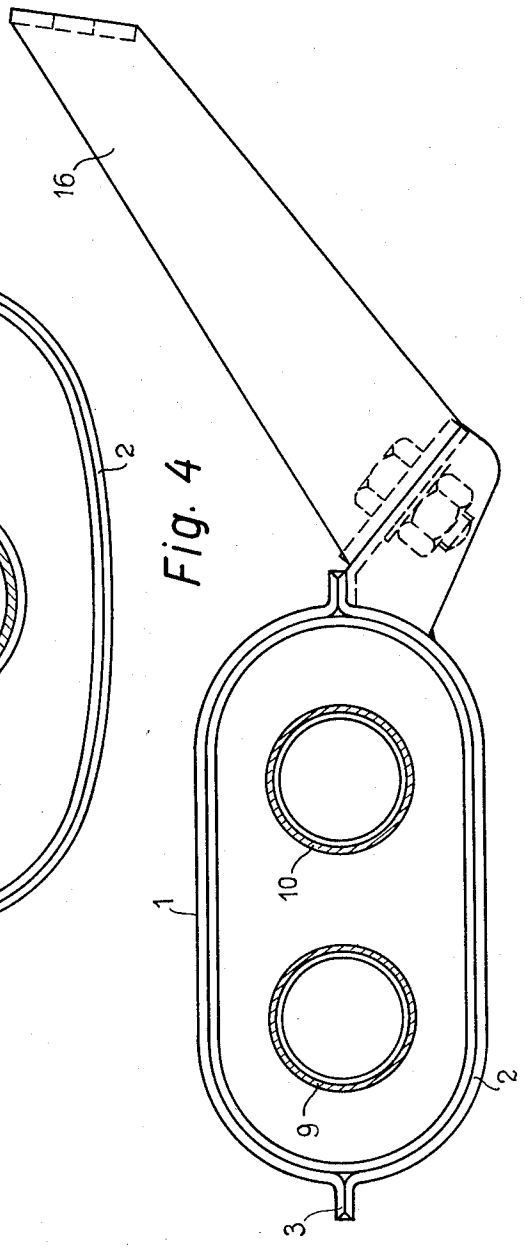


Fig. 4

United States Patent Office

2,897,909

Patented Aug. 4, 1959

2,897,909

SILENCER FOR MOTOR VEHICLES

Carlo Abarth, Turin, Italy, assignor to Abarth & Co., Turin, Italy

Application June 16, 1958, Serial No. 742,085

Claims priority, application Italy August 7, 1957

1 Claim. (Cl. 181—50)

This invention relates to an exhaust silencer for internal combustion engines, more particularly for use on the Renault-Dauphine sport motor car instead of the original silencer, which increases the engine efficiency through affording a satisfactory silencing.

The characteristic features of the improved silencer will be understood from the appended description referring to the accompanying drawing wherein:

Figure 1 is an elevational view of the silencer,

Figure 2 is a plan view of Figure 1 in section on line II—II of Figure 1,

Figures 3 and 4 are sectional views on an enlarged scale respectively on lines III—III of Figure 1 and IV—IV of Figure 2.

The silencer comprises a frusto-conical casing of flattened cross-sectional shape made up of two halves **1, 2** having longitudinal flanges for welding to each other as shown at **3**. Two perforated metal tubes **4, 5** are arranged within the casing **1** and are supported at their ends in the casing by drawn sheet metal plates **6, 7**.

Two discharge tubes **9, 10** are connected on the extension of tubes **4, 5** to the rear of the casing and are slightly inclined upwardly as shown in Figure 1.

A filling **8** of sound deadening material, such as glass wool is interposed between the perforated tubes **4, 5** and casing **1, 2**.

11 denotes stiffening ribs on the casing halves **1, 2, 12** being a drawn sheet metal plate secured to the fore end of the casing and having connected therewith the first rectilinear portion **13***a* of the exhaust conduit.

As distinct from the original silencer structure on the Renault-Dauphine car, the exhaust conduit in the improved silencer is of substantial length, which improves effectiveness of the silencer. The rectilinear portion **13***a* is followed by a cranked portion **13***b* bent to the rear, a further rectilinear portion **13***c*, and an upwardly bent portion **13***d* leading to the fitting **15** for attachment to the exhaust manifold of the engine.

A further tube **18**, adapted to improve deadening of the exhaust noise is arranged within the tube **13**. The walls of the tube **18** contact at three regions at least with the inner walls of the tube **13**.

A gas expansion chamber is confined within the casing between plates **12** and **7** and has arranged therein a plate **14** in which apertures **14***a* are provided for the flow of gases which are deflected as shown by the arrows in Figure 2.

16, 17 denote the fittings for attachment of the silencer to the motor vehicle.

What I claim is:

Exhaust silencer for internal combustion engines more particularly on the Renault-Dauphine sport car, characterized in that the silencer comprises: a flattened substantially frusto conical casing having a forward expansion chamber subdivided by a perforated partition into two compartments and a rear silencing chamber comprising two perforated tubes insulated by sound deadening material from the casing, the said two tubes being connected with two outlet tubes for exhaust of the gases to the outside, the gas expansion chamber being connected through a tube of substantial length to the exhaust manifold of the engine; in that the tubes arranged within the casing are supported at their ends by a pair of plates, the expansion chamber being confined between the first plate supporting the tubes and a plate connected with the exhaust manifold, a third plate being interposed with staggered holes between the two first mentioned plates; in that the tube leading from the silencer to the exhaust manifold comprises a first rectilinear portion extending along the axis of the silencer casing, a cranked portion, a further rectilinear portion extending rearwardly, a further cranked portion, a rectilinear upwardly extending portion and a fitting for attachment to the exhaust manifold; and in that a further tube is arranged within the tube leading from the exhaust manifold to the silencer and contacts at three regions at least with the inner walls of the first mentioned tube.

No references cited.