March 6, 1934. T. TRANSISKUS 1,949,667

EXHAUST SILENCER

Filed May 7, 1932 2 Sheets-Sheet 1

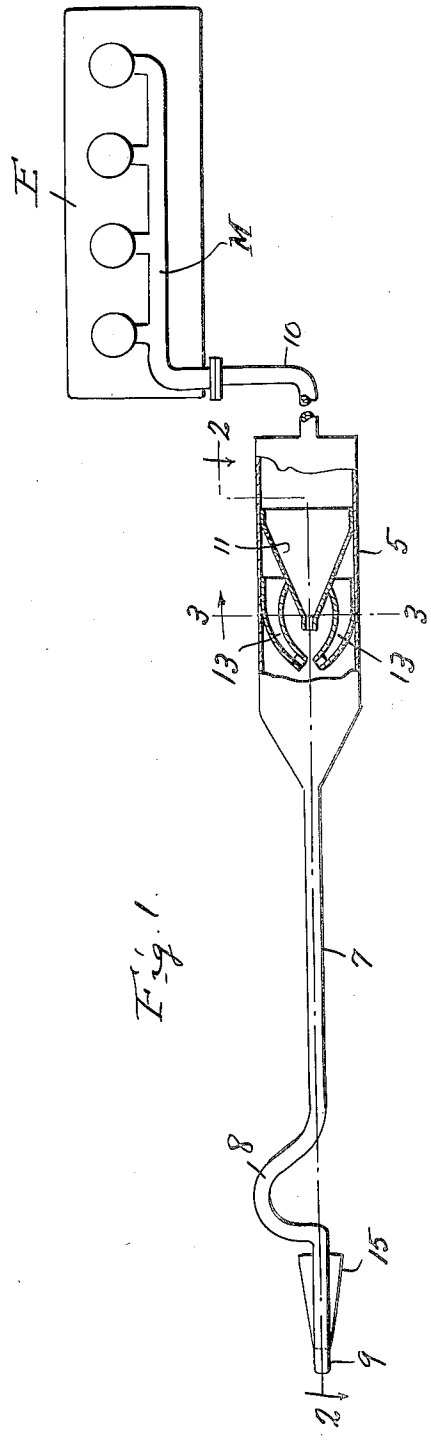


Fig. 1.

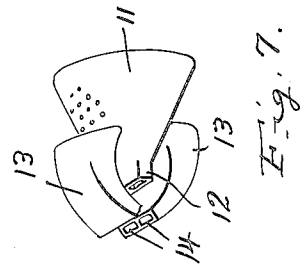


Fig. 7.

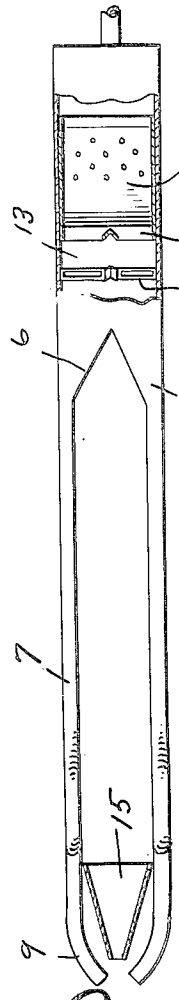


Fig. 2.

Inventor

Theodore Transiskus

By Clarence A. O'Brien

Attorney

March 6, 1934. T. TRANSISKUS 1,949,667

EXHAUST SILENCER

Filed May 7, 1932 2 Sheets-Sheet 2

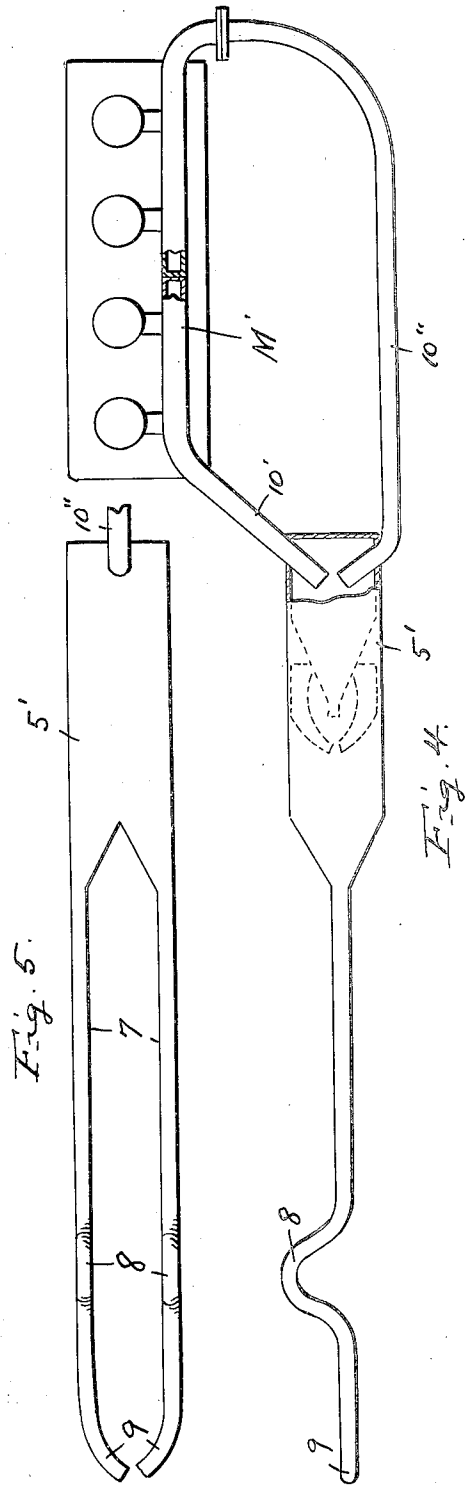
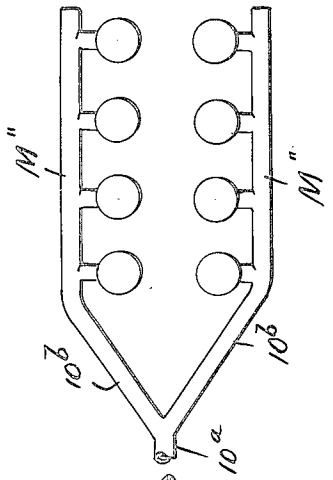


Fig. 4.

Fig. 5.



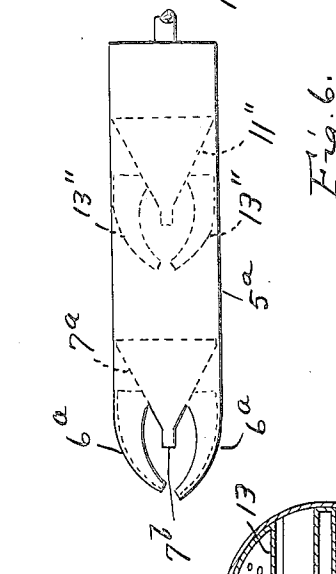


Fig. 6.

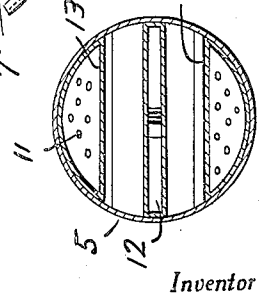


Fig. 3.

Inventor

Theodore Transiskus

By Clarence A. O'Brien

Attorney

Patented Mar. 6, 1934

1,949,667

UNITED STATES PATENT OFFICE

1,949,667

EXHAUST SILENCER

Theodore Transiskus, Buffalo, N. Y.

Application May 7, 1932, Serial No. 609,938

1 Claim. (Cl. 137—160)

This invention relates to exhaust silencers for internal combustion engines and the like, and in accordance with the present invention an exhaust silencer is provided such as could be used in internal combustion engines whether of the four, six, eight cylinder or any other type of engine embodying a greater number of power cylinders and which will be found efficient for effectively silencing the driven charge of the exhaust gases.

The invention together with its numerous objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a top plan view of an exhaust silencer forming part of the invention, the same being shown applied to a four cylinder engine, certain parts of the silencer being broken away and shown in section.

Figures 2 and 3 are sectional views taken substantially on the lines 2—2 and 3—3 respectively of Figure 1.

Figure 4 is a view similar to Figure 1 of a slightly modified form of the invention, the same being shown applied to a four cylinder internal combustion engine.

Figure 5 is a side elevational view of the silencer shown in Figure 4.

Figure 6 is a top plan view of still another form of the invention, the same being shown applied to an eight cylinder internal combustion engine.

Figure 7 is a perspective view of a perforated cone and curved duct associated therewith forming a part of the invention.

Referring more in detail to the drawings and particularly to Figures 1 to 3 inclusive, it will be seen that my improved exhaust silencer comprises a rectangular casing 5 having at one end upper and lower tapered branches 6 merging into elongated extensions 7 curved adjacent their free ends as at 8, and at said free end being curved and approaching one another as at 9.

The casing 5 provides a relatively large chamber which as shown in Figure 1 is connected to the exhaust manifold M of a four cylinder internal combustion engine E through the medium of a pipe 10.

Arranged in the chamber or casing 5 is a baffle member having an opening therethrough and including a substantially conical end portion 11 and a substantially squared end 12. The conical end 11 is perforated as shown. Also arranged in the casing 5 at relatively opposite sides of the baffle are curved passage forming shells or members 13 that taper at one end, and which at their smallest ends are divided by relatively small partitions providing for each passage forming member 13 a pair of outlets 14.

As shown in Figure 1 the members 13 are arranged with their widest or flared ends disposed between the baffle and the proximate walls of the casing or chamber 5, and with their outlet ends approaching one another.

Suitably supported between the extensions 7 adjacent the ends 9 thereof is a conical or funnel shaped member 15.

In actual practice and from the above it will be apparent that the exhaust gases pass from the manifold M into the chamber or casing 5 and through the baffle, certain of the gases passing through the outlet 12 of the baffle while other of the gases pass through the perforations and then through the conduits 13 to finally discharge from the silencer through the outlets 6 and extensions 7, the ends 9 of the extensions being such that the gas streams issuing therefrom are directed toward one another and across the ends 9 for drawing the gases through the conduits.

As is apparent, the baffle and the conduits 13 facilitate the breaking up of the exhaust gas into particles, thus facilitating the passage of the gas stream through the silencer.

At the same time through the provision of the funnel 15 a current of air is directed across the discharge ends 9 of the conduits 7 to create sufficient suction for drawing the gases through the conduits.

The form of the invention shown in Figure 5 is substantially identical with that shown in Figures 1 to 3 as above described, it being noted, that the form of the invention shown in Figures 4 and 5 is adapted for use with a four cylinder internal combustion engine in such a manner as to provide for the feeding of the exhaust gases into the chamber 5′ from relatively opposite sides of the chamber; and accordingly a pipe extension 10′ leads from one side of the manifold M′ and through one side of the casing 5′ and diagonally of the casing while a second pipe 10″ leads from a relatively opposite end of the exhaust manifold M′ and at its free end extends into the chamber or casing 5′ from a relatively opposite side thereof and also diagonally and in proximity to the inner end of the pipe 10′.

In the form of the invention shown in Figure 6, it will be seen that the exhaust silencer comprises a casing 5a that at one end is provided with a pair of rearwardly extending curved exhaust branches 6a, the concaved sides of which are disposed in confronting relation so that the gas

streams discharging from the branches 6*a* are directed against one another. At this end of the casing there is also arranged within the casing an apertured baffle member which includes a substantially conical end 7*a* arranged within the casing and a substantially rectangular end 7*b* disposed externally of the casing between the branches 6*a*.

There is also arranged in the casing 5*a* a second baffle 11'' and a pair of conduits 13'' arranged at opposite sides of the baffle 11'' as clearly shown in broken lines in Figure 6.

In this last described form of the invention the exhaust gases from the internal combustion engine are admitted into the casing 5*a* through an end wall thereof, a pipe 10*a* being provided for this purpose, and having branches 10*b* extending therefrom and connected with the exhaust manifolds M'', it being noted that this form of the invention is illustrated as used in conjunction with an eight cylinder internal combustion engine.

Even though I have herein shown and described the preferred embodiments of the invention, it is to be understood that I am fully aware that other forms of the invention may be resorted to in actual practice, and accordingly intend in no wise to limit the invention beyond the requirements of the prior art and scope of the appended claim.

Having thus described my invention, what I claim as new is:

An exhaust silencer for internal combustion engines comprising a shell like casing having a pair of integral conduit tubes extending in laterally spaced relation relative to one another from one end of the casing, said conduit tubes having the free ends thereof curved toward one another to direct the gas streams discharging therefrom against one another, a baffle arranged within said casing intermediate the ends thereof, said baffle having an opening therethrough and also having a substantially conical intermediate body portion and a substantially rectangular end, and relatively short arcuate conduits arranged in the casing at opposite sides of said baffle, said last named conduits tapering and having their smallest ends confronting to direct the exhaust streams discharging therefrom against the exhaust stream discharging from the rectangular end of the baffle; and an air funnel disposed between the first named conduit tubes adjacent the curved ends thereof for directing a current of air, due to the movement of the vehicle, between the said ends of said first named conduit tubes.

THEODORE TRANSISKUS.