April 27, 1954 J. H. BAILEY 2,676,665

COMBINATION MUFFLER, COOLER, AND SILENCER FOR USE WITH DIESEL ENGINES

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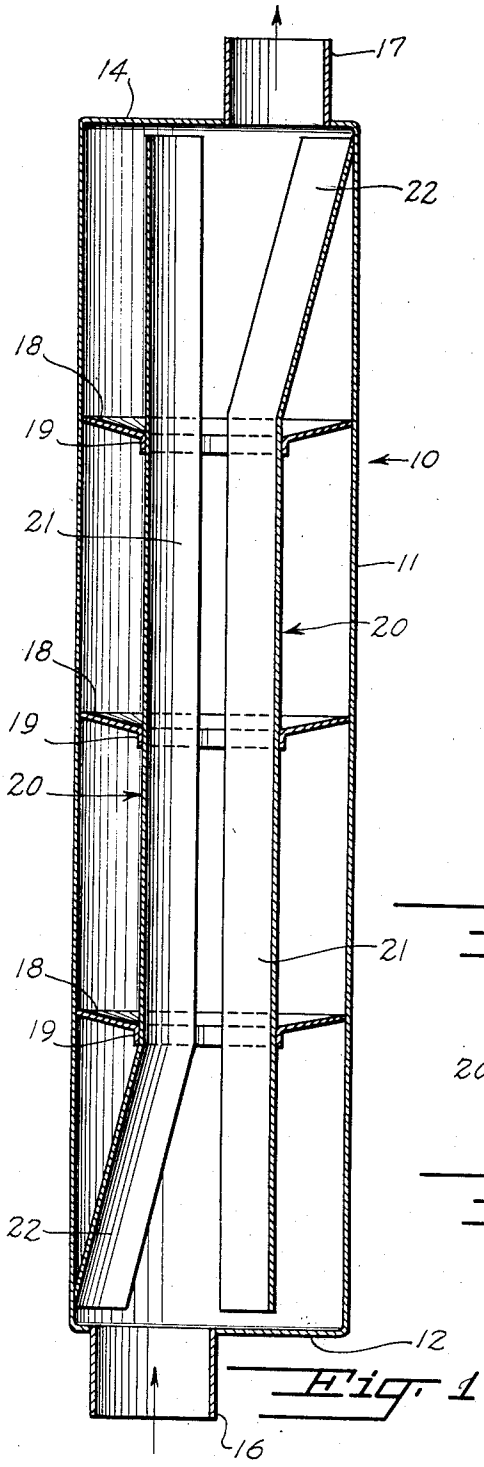


Fig. 1

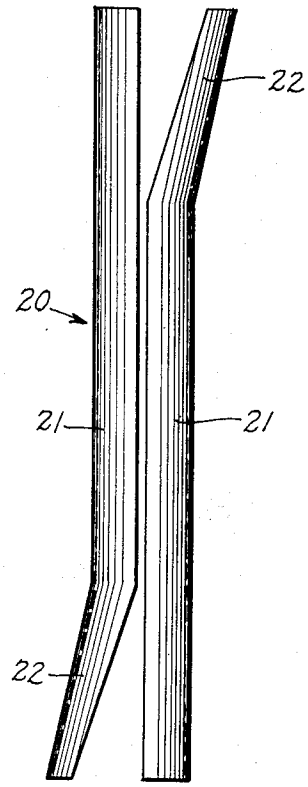


Fig. 2

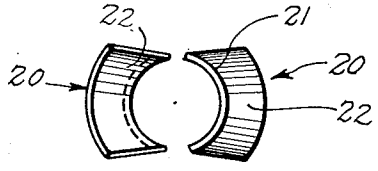


Fig. 3

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COMBINATION MUFFLER, COOLER, AND SILENCER FOR USE WITH DIESEL ENGINES

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1 Claim. (Cl. 181—41)

1

This invention relates to a combination muffler, cooler and silencer for use with an engine such as a diesel engine.

The object of the invention is to provide a combination muffler, cooler and silencer for diesel engines which is constructed so that the possibility of back pressure and after firing are eliminated and whereby an economy of fuel will be effected.

Another object of the invention is to provide a combination muffler, cooler and silencer which is adapted to be connected to the exhaust of a diesel or other engine whereby the exhaust gases will be cooled, silenced and whereby there will be more efficiency of the engine during operation thereof.

Still another object of the invention is to provide a baffle bar muffler silencer which includes an outer shell or housing that has inlet and outlet connections extending from each end, there being a plurality of spaced baffle plates positioned in the housing for supporting longitudinally extending silencer members.

A further object of the invention is to provide a baffle bar muffler silencer which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a longitudinal sectional view taken through the muffler silencer of the present invention.

Figure 2 is a side elevational view of the silencer members.

Figure 3 is an end elevational view of the silencer members.

Referring in detail to the drawings, the numeral 10 designates a shell or housing which may be fabricated of any suitable material, and the housing 10 includes an annular side wall 11. The housing 10 further includes a pair of spaced parallel end walls 12 and 14, Figure 1.

Extending from the end wall 12 is a conduit or pipe 16 which is adapted to be connected to a suitable engine such as a diesel engine whereby exhaust from the engine will be conveyed to the interior of the housing 10. Extending from the other end wall 14 is a conduit or tube 17 which is adapted to convey exhaust gases from the interior of the housing 10. It will be noted from Figure 1 that the conduits 16 and 17 are arranged in offset relation with respect to each other and the inlet conduit 16 is of larger diameter than the outlet conduit 17.

2

Arranged within the housing 10 is a plurality of baffle plates 18. Each of the baffle plates 18 has the same construction and the baffle plates 18 are arranged in spaced parallel relation with respect to each other. The baffle plates 18 are each provided with a central circular opening and surrounding this opening is an annular flange 19.

Extending longitudinally through the housing 10 is a pair of silencer members which are each indicated by the numeral 20. The silencer members 20 have the same construction and each silencer member 20 includes a body member that embodies a straight or elongated portion 21 and an offset portion 22. It will be noted from Figure 1 that when the parts are in use or in their assembled position the offset portion 22 of one of the silencer members 20 is arranged contiguous to the inlet conduit 16, while the offset portion 22 of the other silencer member 20 is arranged contiguous to the outlet conduit 17. The silencer members 20 may be arcuate in cross section, and the flanges 19 of the baffle plates 18 may be secured to the silencer members 20 in any suitable manner, as for example by welding. Also, the outer section of the offset portion 22 may be secured to the inner surface of the housing 10 in any suitable manner.

In use, the exhaust gas from the diesel or other engine enters the housing 10 through the conduit or nipple 16. This gas is hot and the end portions of the silencer members 20 which are contiguous to the conduit 16 serve as a guide means for the incoming hot gases. The gases, as they leave the housing 10 are guided by the end portions of the silencer members 20 to the outlet tube 17. The baffle plates 18 serve to maintain the silencer members 20 in their proper spaced relation in the housing 10 and the baffle plates 18 also act as cooling fins to help cool the exhaust gases as they travel the circuitous path through the housing.

The outlet conduit 17 is of smaller diameter than the inlet conduit 16 and the pair of silencer members 20 are of identical construction. The baffle bar muffler silencer of the present invention can be used for diesel engines and by means of the present invention the possibility of back pressure and after firing are eliminated and also there will be an economy of fuel afforded or effected.

I claim:

A combination muffler, cooler and silencer comprising a cylindrical housing provided with a cylindrical side wall, a pair of spaced parallel end walls arranged on each end of said housing, a

conduit extending from one of said end walls for conveying exhaust gases to said housing, a conduit extending from the other of said end walls for conveying exhaust gases away from said housing, said exhaust conduit being of less diameter than said inlet conduit, said conduits being arranged in offset relation with respect to each other, a plurality of spaced parallel baffle plates positioned in said housing and each provided with a circular aligned opening, a circular flange extending from each of said baffle plates, and silencer members extending longitudinally through said housing, through said openings and secured to said flanges, said silencer members including first and second identical body members each provided with a straight portion and an offset portion, the offset portion of said first body member being arranged contiguous to said inlet conduit, and the offset portion of said second body member being arranged contiguous to the exhaust conduit of said housing, said body members being arcuate in cross section.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,607,003	King	Nov. 16, 1926
2,047,443	Starkweather et al.	July 14, 1936
2,056,608	Jack	Oct. 6, 1936
2,081,306	Rauen	May 25, 1937