

March 29, 1927.

A. G. WENDLING

1,622,692

EXHAUST MUFFLER

Filed May 12, 1926

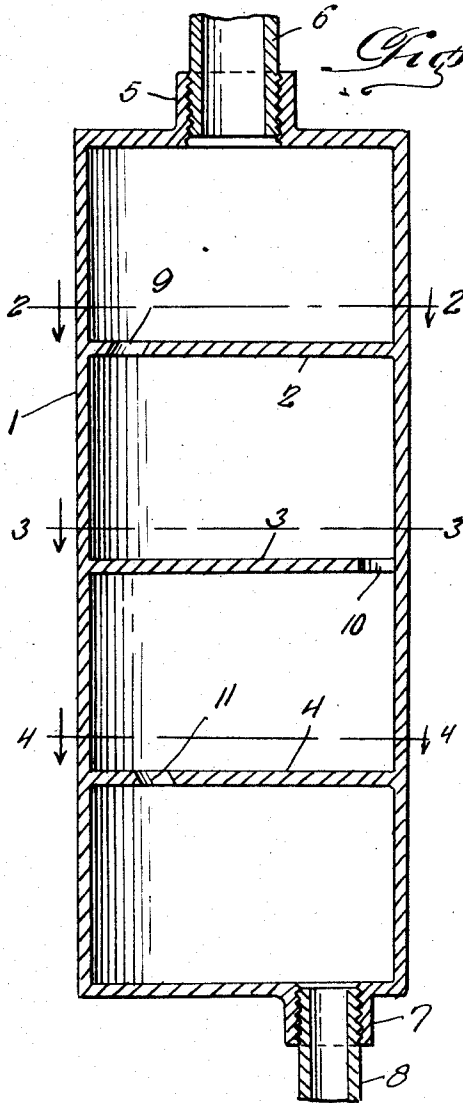


Fig. 1.

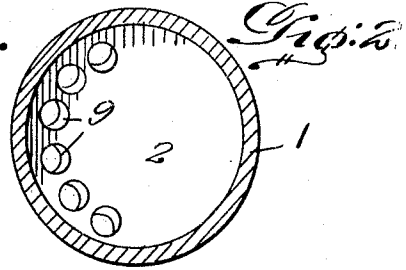


Fig. 2.

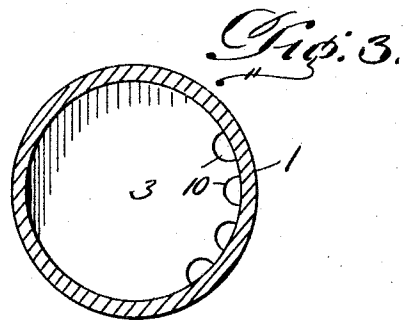


Fig. 3.

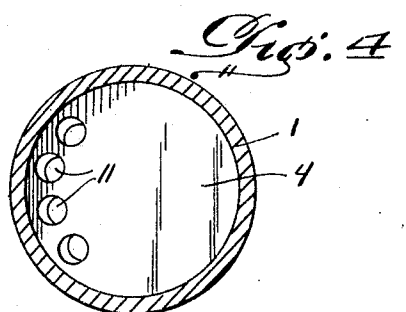


Fig. 4.

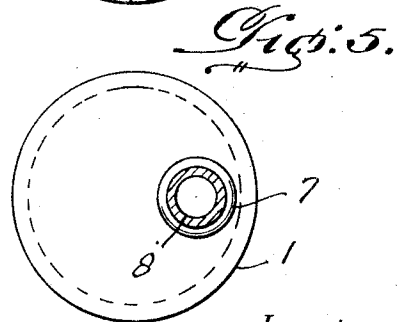


Fig. 5.

Inventor
A. G. Wendling,

By *Clarence A. O'Brien*

Attorney

UNITED STATES PATENT OFFICE.

ALBERT GEORGE WENDLING, OF KITCHENER, ONTARIO, CANADA.

EXHAUST MUFFLER.

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This invention relates to exhaust mufflers for internal combustion engines, and has for its primary object to provide a device of this character that may be constructed of a solid or one piece aluminum or other metal casting, preferably aluminum having a plurality of intercommunicating gas expansion chambers to facilitate the complete expansion of the exhaust gases before passing to the atmosphere in order that there will be absolutely no sound whatever when the gases finally escapes from the muffler.

Other objects will become apparent as the nature of the invention will be better understood, the same comprising the novel form of jig hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawing wherein like reference characters indicate corresponding parts throughout the several views:

Figure 1 is a detail longitudinal section of a muffler constructed in accordance with the present invention, and

Figures 2, 3, 4, and 5 are detail transverse sections taken substantially upon the lines 2-2; 3-3; 4-4, and 5-5 of Figure 1.

Now having particular reference to the drawing, my novel muffler constitutes the provision of a cylindrical shell 1 of suitable length and cross sectional area and closed at its opposite ends as clearly disclosed in Figure 1. Cast integrally with the shell 1 are transverse partition walls 2, 3, and 4, in equal spaced relation for providing a plurality of gas receiving compartments within the shell. These partition walls are cast integrally with the shell during the molding operation, the mold, which does not form any part of the present invention being equipped with chamber constructing cores which are removed after the molding operation through the apertures in the side of the cylinder which apertures are then sealed up with aluminum discs or plugs which are first attached and then welded to the shell after the sand cores are removed.

One end wall of the shell is formed with a pipe attaching nipple 5 within which is arranged one end of a pipe 6 leading from the exhaust manifold of the engine in order

that the gases therefrom will be conveyed into the shell. This nipple 5 is preferably arranged within the center of the end wall while the opposite end wall is formed at its edge with a smaller pipe attaching nipple 7 within which is arranged one end of an exhaust pipe 8 in order that the gases may escape from the shell to the atmosphere.

The partition wall 2 is formed adjacent its edge with a series of exhaust apertures 9 while the central partition wall 3 is formed at a diametrically opposite point with other exhaust apertures 10 of lesser diameter and being in less number than the diameter and number of the openings 9 in the partition wall 2. The other end partition wall 4 is formed adjacent the edge opposite from the edge of the wall 3 having the apertures 10 with exhaust apertures 11 also of lesser diameter and number than the apertures 10 in said central partition wall 3.

The relationship, number, and size of the openings in the various partition walls will cause a circuitous passage of the exhaust gases through the shell and prevent the rushing of the gases through the shell in a rapid manner for allowing of the proper expansion of the gases prior to the discharge of the same into the atmosphere which is necessary in muffling the explosions occurring in the cylinders of the engine.

It will thus be seen that I have provided a highly novel, simple, and efficient form of exhaust muffler that may be constructed of a single casting and that is well adapted for all the purposes heretofore designated.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:—

In a muffler of the class described, a closed cylindrical shell, an inlet pipe attaching nipple associated with one end of said shell and arranged centrally of said end, an exhaust pipe attaching nipple associated with the opposite end of the closed shell and arranged adjacent the edge portion thereof, central and end partitions arranged transversely within the shell and being cast integrally therewith for dividing the shell into a plurality of compartments, the partition adjacent the inlet being formed with a series

of exhaust apertures adjacent its edge, the central partition being formed with a series of exhaust apertures at a point diametrically opposite the aforementioned exhaust apertures, the other end partition which is disposed adjacent the outlet having a series of exhaust apertures formed therein adjacent its edge, the same being arranged at a point diametrically opposite the second mentioned series of exhaust apertures, the apertures of the several partitions decreasing in area toward the discharge end of the shell. 10

In testimony whereof I affix my signature.
ALBERT GEORGE WENDLING.