

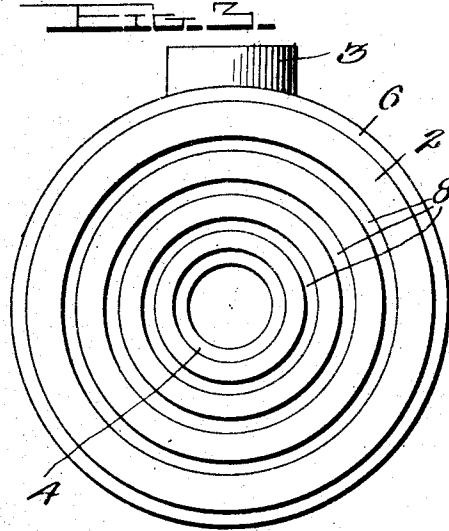
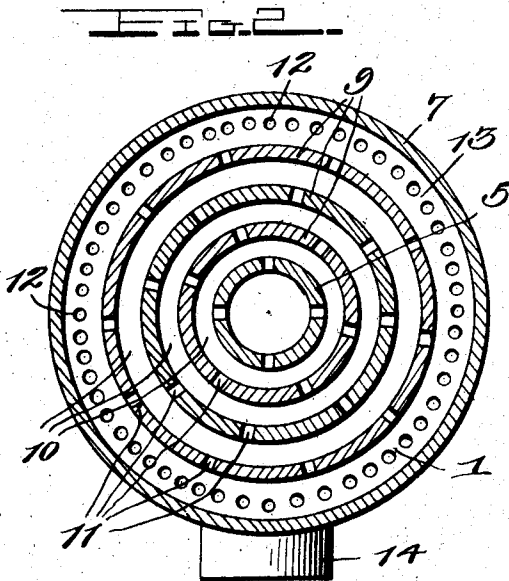
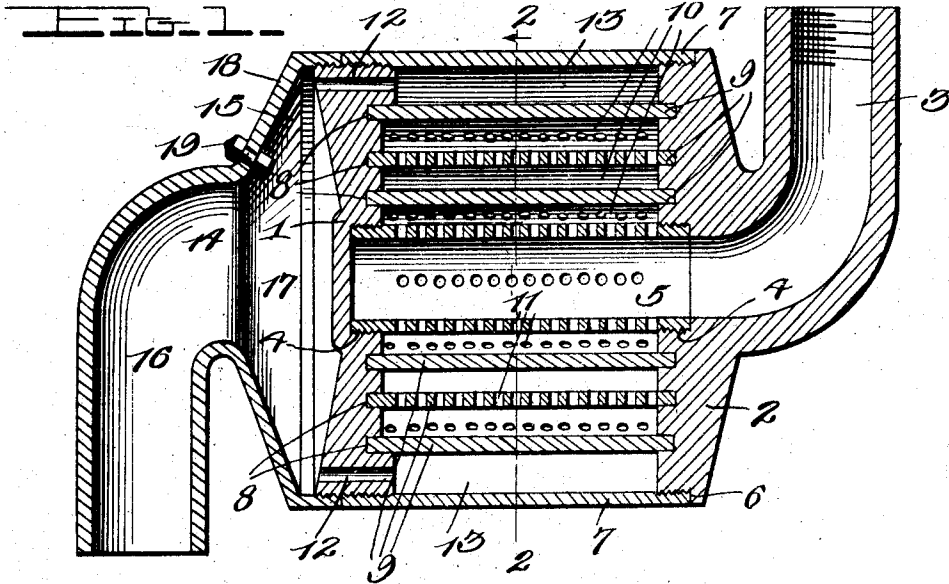
N. M. MATULA.

MUFFLER.

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1,045,419.

Patented Nov. 26, 1912.



Inventor

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UNITED STATES PATENT OFFICE.

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MUFFLER.

1,045,419.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, NICHOLAS MICHAEL MATULA, a citizen of Croatia, in the Kingdom of Austria-Hungary, a subject of King Francis Joseph, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Mufflers, of which the following is a specification, reference being had to the accompanying drawings.

The present invention relates to new and useful improvements in mufflers and one which is designed to be used more particularly with internal combustion engines.

The primary object of the present invention is to provide a device of this character which will be neat in appearance and compact in form, and one which may be readily attached to a supporting frame and one which will properly baffle the exhaust gases as it passes through the same.

This invention has for a further object a simple, durable and efficient construction of apparatus of this character, the parts of which may be cheaply manufactured and readily assembled and installed, and which will require practically no attention to maintain in proper running order. And the invention also aims to generally improve devices of this class and to render them more useful and commercially desirable.

With the above and other objects in view, this invention consists generally of a pair of spaced plates having formed therebetween, a plurality of communicating compartments so that the exhaust gases may pass through the compartments, and subsequently be exhausted within the atmosphere.

This invention further consists of novel details of construction, combination, formation and arrangement of parts, as will be hereinafter more fully described, claimed and particularly pointed out in the appended drawings, in which,

Figure 1 is a vertical longitudinal section embodying my invention; Fig. 2 is a transverse section taken on the line 2-2 of Fig. 1, and Fig. 3 is a front elevation of one of the end plates.

Reference now being had to the accompanying drawings, corresponding parts being designated by like numerals throughout the several views, the invention consists of a pair of spaced plates indicated by the numerals 1 and 2, respectively, which are preferably cast in one piece of material.

The end plate 2 is provided with a vertical extension having a passageway 3 formed therein which is in communication with the exhaust port of the engine, and the upper extremity of this extension is internally threaded so that the same may be readily detachably secured to the exhaust pipe of the engine. Each of these plates 1 and 2 is provided within one face thereof with centrally located recesses 4 for the reception of a tubular member 5 having its opening in communication with the passageway 3. These recesses 4 are internally threaded for the reception of the threaded ends of the tubular member 5, whereby the same may be detachably as well as adjustably mounted within the said recesses. The plate 1 is provided upon the periphery thereof with right and left-handed threads, whereas the opposite plate 2 is provided with a threaded reduced portion, thereby forming a shoulder 6 upon the periphery thereof. A cylindrical sleeve 7 being internally threaded adjacent its outer extremities, is adapted to be placed upon the threaded peripheries of the plates 1 and 2, thereby completely submerging the interior of the device. Each of the said plates 1 and 2 is provided with opposite alining grooves 8 which are formed concentric with the plates and adapted to receive a plurality of partitions 9. The said partitions 9 are spaced from the tubular member 5 in increasing ratios, thereby forming chambers 10 therebetween having increasing areas. These partitions and also the tubular member 5 are provided with a plurality of apertures 11, whereby the exhaust gases may freely pass through the same.

One of the particular features of the present invention is the arrangement of these apertures 11, so that as the exhaust gases pass through the same, the noise of the gases will be softened before being exhausted within the atmosphere. These apertures 11 are arranged in rows within the said partitions and inner cylindrical member, and the said inner cylindrical member has substantially four of these rows of apertures which are arranged at right angles within the same, whereas the next adjacent partition is provided with six rows of apertures, and the remaining partitions are also provided with similar increasing rows of these apertures. It is also to be noted that these apertures do not extend in alinement with the apertures of the adjacent partitions

so that the exhaust gases will be checked when passing through the same.

A plurality of apertures 12 are formed within the plate 1 and extend transversely thereof, and are in communication with the chamber 13 formed within the body portion of the muffler between the sleeve 7 and the outer partition mounted therein.

An exhaust manifold 14 is provided with an enlarged circular portion 15 which is detachably mounted upon the outer periphery of the plate 1, as shown, and has extending therefrom, a depending portion having a passageway 16 formed therein which leads to the atmosphere. The outer face of the plate 1 is inclined inwardly, whereas the connection between the enlarged portion 15 of the exhaust manifold and the depending portion formed integral therewith, inclines outwardly to form a chamber 17, and it is obvious as the gases pass through the transverse openings 12 formed within the plate 1, they will abut against the inclined wall 18 of the exhaust manifold and then circulate within the chamber 17, before entering into the atmosphere. A bolt 19 is formed within the inclined wall 18 of the exhaust manifold which will apparently provide means for supporting the muffler to any suitable frame or support.

From the foregoing description taken in connection with the drawings annexed hereto, the operation and advantages of this improved muffler will be readily apparent and understood by those skilled within the art.

I have in the foregoing described a simple and preferred form of my invention; but I desire it to be understood that no limitation

to the structural details herein set forth are limited, to preserve the right to any changes, alterations or modifications which may be resorted to within the scope of my invention and without departing from the spirit or sacrificing the utility of the same.

What I claim is:—

1. In a muffler, the combination with a casing, of a pair of spaced end plates mounted therein, a plurality of concentric apertured partitions mounted between said end plates, the said partitions being spaced at an increasing ratio from each of the said partitions and from the center of the casing, and one of the said end plates having a plurality of apertures formed therein substantially as described.

2. In a muffler, the combination with a casing, of a pair of end plates mounted therein, a plurality of spaced apertured partitions mounted between said end plates, an exhaust manifold carried by one of the said end plates, the outer face of the last mentioned end plate being inclined toward the center thereof, the said exhaust manifold inclining from the said end plate to form a chamber therebetween, and then terminating in the cylindrical passageway leading to the atmosphere and means of communication between the said chamber and the interior of the casing substantially as described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

NICHOLAS MICHAEL MATULA.

Witnesses:

H. W. STOREY,
JOSE HETZLINE.