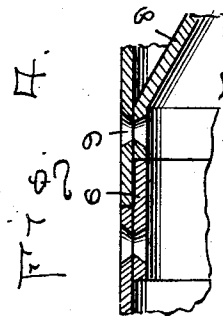
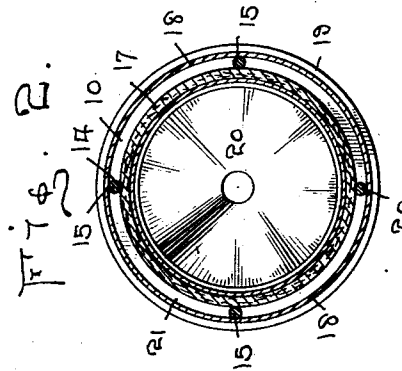
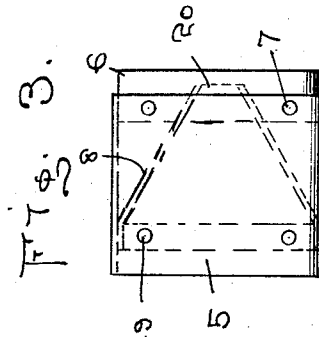
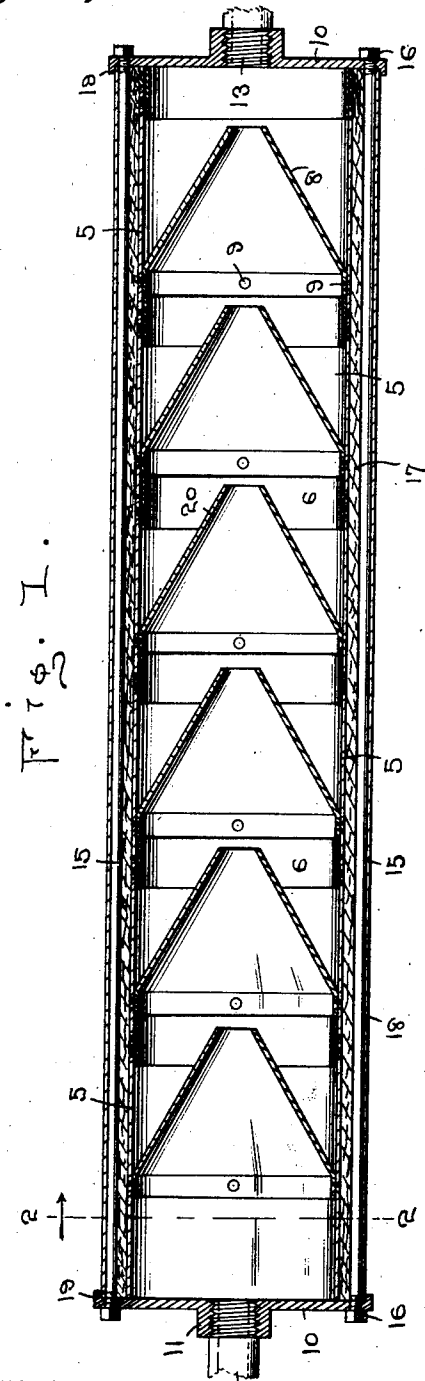


C. E. DE WITT.
ENGINE MUFFLER.
APPLICATION FILED NOV. 29, 1912.

1,061,272.

Patented May 13, 1913.



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UNITED STATES PATENT OFFICE.

CLARENCE E. DE WITT, OF MOUNT JEWETT, PENNSYLVANIA.

ENGINE-MUFFLER.

1,061,272.

Specification of Letters Patent.

Patented May 13, 1913.

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To all whom it may concern:

Be it known that I, CLARENCE E. DE WITT, a citizen of the United States, residing at Mount Jewett, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Engine-Mufflers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to mufflers for engines and has for its object to provide an improved muffler of simple and economical construction and increased efficiency.

A special object of the invention is to provide an improved muffler comprising a plurality of specially constructed removable sections whereby the working length of the device may be varied at will.

With these objects in view, the invention consists in the improved construction, arrangement and combination of the parts of a device of this character which will be first hereinafter fully described and afterward specifically claimed.

In order that its construction and operation may be readily comprehended, I will now proceed to fully describe my invention, in connection with the accompanying drawings which illustrate an improved embodiment thereof in which,—

Figure 1 is a longitudinal sectional view of my improved muffler. Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1. Fig. 3 is a side elevation view of one of the muffler sections, and Fig. 4 is an enlarged fragmental sectional detail view.

Referring to these drawings in which similar reference characters correspond with similar parts throughout the several views; the cylindrical sections 5 are each provided with a reduced end portion 6, which, in the present instance consists of rings or short cylindrical sections which extend into the sections 5 and are secured thereto by means of rivets 7. The reduced end portion 6 of one muffler section extends into the opposite end of the contiguous muffler section and fits snugly therein, so that as many of the muffler sections as necessary may be thus fitted together, so as to form an elongated cylindrical body, as illustrated in Fig. 1. Secured within each muffler section is a hollow frusto-conical member 8, having its base fitted snugly within the inner wall of the

cylinder 5 and secured thereto, by means of rivets 9. When the muffler sections are fitted together, each of the frusto-conical members 8, except the last one toward the exhaust outlet, extends into proximity with the base of the adjacent frusto-conical member. The cylindrical section and the exhaust outlet end are not essentially provided with a reduced portion, as no other similar section is fitted thereon, but for the purpose of uniformity and interchangeability of all the parts, I preferably form all of the sections exactly alike. Cylinder heads 10 are fitted upon the opposite ends of the muffler and each cylinder head is preferably in the form of a disk having central bosses 11, and being centrally apertured through the bosses and screw threaded for the reception of an outlet pipe 12 and an inlet pipe 13. The cylinder heads 10 are provided with apertures 14 near their peripheries, and bolts 15 extend through the apertures 14 and connect the cylinder heads, nuts 16 being provided on both ends of each bolt 15, so that the bolts may be easily removed from either end of the muffler, and one or more sections thereof may be removed from either end, without disturbing the sections at the other end.

Surrounding the inner casing, which consists of the cylindrical sections 5 and the bolts 15 which connect them together, is a heat insulating jacket 17, preferably of asbestos, this jacket being between the bolts 15 and the outer wall of said inner casing. Surrounding the jacket 17 and the bolts 15 is an outer casing 18, preferably of cylindrical form and preferably of metal. The heads or disks 10 are each provided with a circumferential flange 19, in which the respective ends of the cylindrical casing 18 are seated.

In practice, the exhaust fluid enters at 13 and passes through the sections 5 and their respective diverging elements 8, and finally exits through the exhaust outlet pipe 12. The inlet, or nozzle 20 of each member 8, is substantially of the same diameter as the interior of the outlet and inlet pipes, 12 and 13, respectively, so that the exhaust fluid is not unduly retarded within the muffler.

It will be seen that an air-chamber 21 surrounds the jacket 17, so that the sound is muffled by the air in the chamber 21, as well as by the jacket 17; and it will also be seen that the minimum radiation of heat from

the muffler results from said-jacket 17 and air-chamber 21.

It will be seen that I have provided a device of this character which is fully capable of attaining the foregoing objects and in a thoroughly practical and efficient manner.

I do not limit my invention to the exact details of construction, combination and arrangement of parts, as herewith illustrated and described, but my invention may only be limited by a reasonable interpretation of the claims.

I claim:

1. A muffler comprising a plurality of removable and replaceable sections, each section comprising a short cylinder shaped at its ends to connect with the adjacent cylinders, and a frusto-conical member.

2. A muffler comprising a plurality of removable and replaceable sections, each section having at its exhaust end a reduced portion to enter the inlet end of the adjacent section, and a frusto-conical member the smaller end of which projects toward the inlet end of the muffler.

3. A muffler comprising a plurality of removable and replaceable sections, each section having at its exhaust end a reduced portion to enter the inlet end of the adjacent section, and a frusto-conical member

the smaller end of which projects toward the inlet end of the muffler, while its larger end fits snugly in the cylinder and abuts against the end of the adjacent section.

4. A muffler comprising a plurality of removable sections each of which comprises a short cylinder reduced at one end to fit into the cylinder of the adjacent section and thus form an inner shell, each section having an inner frusto-conical member, a cylinder of heat-insulating material surrounding the sectional shell, a metal outer cylinder surrounding the heat-insulating cylinder and of a diameter to leave an annular air chamber between the two cylinders, a flanged head inclosing the ends of all of the cylinders, a series of longitudinal bolts between the insulating cylinder and the metal outer cylinder serving to space them apart and passing through the heads, and nuts on the ends of the bolts and bearing against the heads.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARENCE E. DE WITT.

Witnesses:

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A. VERN MILLER.