Nov. 16, 1926. 1,607,146

L. BAUROTH

MUFFLER

Filed March 5, 1921

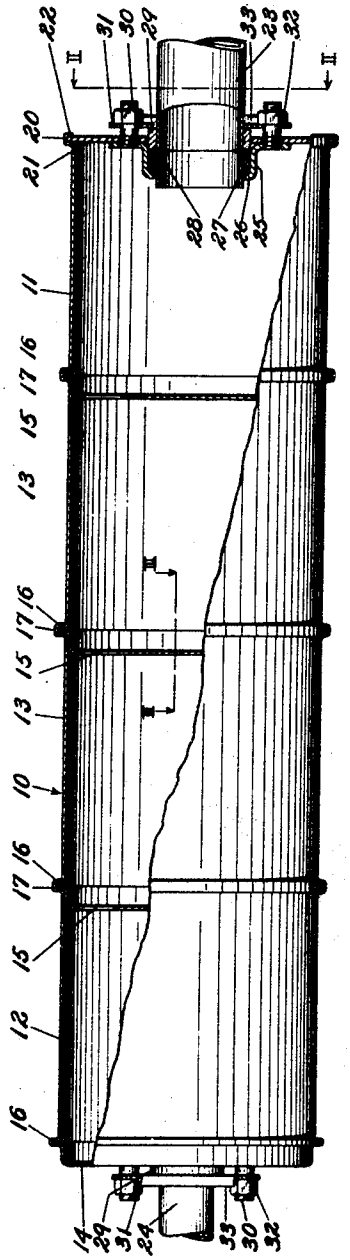


Fig. I.

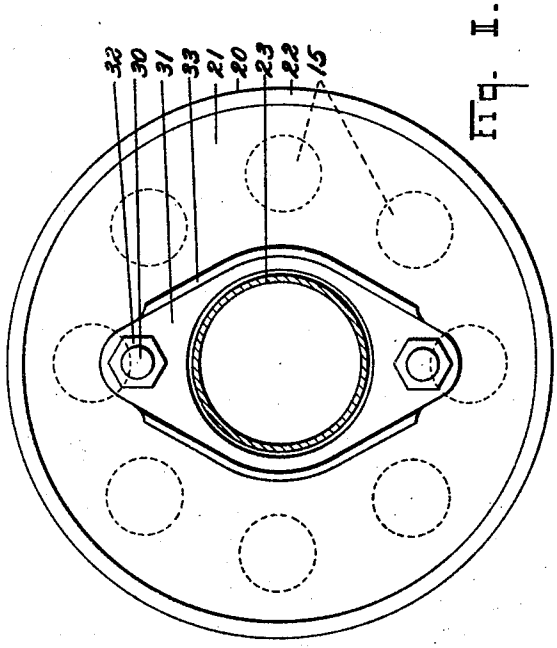


Fig. II.

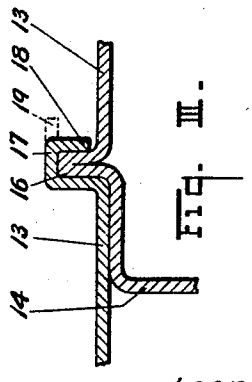


Fig. III.

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UNITED STATES PATENT OFFICE.

LEONHARD BAUROTH, OF TOLEDO, OHIO, ASSIGNOR TO THE WILLYS-OVERLAND COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

MUFFLER.

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My invention relates to mufflers and has for its object to provide a device of this kind comprising few parts, of simple construction, which can be manufactured and assembled at a relatively low cost and which will afford an extremely light and strong construction.

A further object of the invention is to provide an improved muffler constructed of a plurality of tubular sections connected by means of interlocking or interengaging flanges formed upon the sections.

A further object of the invention is to provide an improved muffler comprising a plurality of telescoping cup-shaped sections suitably connected together, the end walls of the cups forming baffle plates within the muffler having perforations therein for the passage of the exhaust gases therethrough.

A further object of the invention is to provide a muffler having an improved joint construction for receiving the ends of the exhaust tubes leading to and from the same.

With these and other objects in view the invention comprises certain improved forms of construction, arrangements of parts, and combinations of elements which will be hereinafter more fully described and claimed, it being understood that the present showing is intended to illustrate one form of the invention, which is susceptible of various modifications to suit special or varying conditions, and it will be further understood that the terms which I have used are merely descriptive and not limiting and that it is my intention to include any and all modifications which come within the scope of the invention as defined by the appended claims.

In the accompanying drawings I have illustrated one embodiment of the invention in which:

Figure I is a side elevation, partly in section, of a muffler embodying the invention.

Figure II is an enlarged detailed section taken on line II—II of Figure I.

Figure III is a detailed section taken on line III—III of Figure I.

Referring to the drawings 10 represents a muffler comprising the tubular end sections 11 and 12 and the intermediate sections 13 each of which is in the form of a cup, the closed end of one section being telescoped into the open end of the adjacent section, said ends being indicated at 14 and all provided with perforations or openings 15 except in the case of the rear end section 12. The closed ends of the cups form baffle plates within the tube for checking the flow of the exhaust gases through the muffler and the perforations or openings 15 may be of any size and number desired, to suit different types of engines. The cups or tubular sections may be connected in any suitable manner, but each is preferably provided adjacent its closed end with an annular bead or rib 16 disposed within an annular grooved rib or flange 17 at the open end of the adjoining cup as shown in Figure I. The ribs or flanges 17 are first formed with their edge portions 18 extending substantially parallel with the body of the cup, as indicated by dotted lines at 19 in Figure III. These portions are afterwards bent down and clamped upon the ribs 16 by the use of any suitable tools or devices designed for the purpose. The end section 11 of the muffler is provided with an annular grooved flange 20 similar to the flange 17 and a disc or end closure member 21 has its edges disposed within the groove of said flange, the edge 22 of which is bent down into clamping engagement with said disc as shown at the right of Figure I. The disc 21 and end wall 14 of the rear cup 12 are each provided with a central opening adapted to receive the tubes or pipes 23 and 24 respectively, for conveying the exhaust gases to and from the muffler. The joints between the tubes and end closure members are substantially of the same construction and a description of one will suffice for both. Disposed within the muffler upon the closure 21 is an annular and inwardly projecting flanged member 25 having an inwardly turned portion 26. The tube 23 is projected through the closure 21 into the flanged member 25 and is surrounded by a packing ring 27 disposed within and retained by the portion 26 of flanged member 25. The tube 23 is preferably provided with an annular rib or bead 28 engaging the outer edge of the packing ring 27 and a retaining ring 29 is adapted to encircle the tube with its inner edge seated upon the rib 28 as shown at the right of Figure I. Screwed into the disc 21 or otherwise connected therewith are the stud bolts 30 carrying a clamping plate 31 which engages the outer end of the retaining ring 29, the joint being tightened to the de-

sired degree by turning the nuts 32 on the bolts 30. The clamping plate 31 is provided with outwardly turned ribs or flanges 33 which serve to stiffen or strengthen the same, said flanges being cut away at the ends of the plate to provide sufficient clearance for the wrench or other tools employed to unscrew the nuts from the bolts. This construction permits the tube to be quickly detached from the muffler, simply by unscrewing the nuts from the bolts, after which the tubes may be readily withdrawn.

While I have illustrated and described one embodiment of my invention it will be obvious that different modifications thereof may be constructed to suit different conditions and I wish therefore not to be restricted or limited to the precise embodiment shown except in so far as the same is limited by appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. A muffler comprising a plurality of telescoping cup shaped sections, each section having an outwardly extending annular flange formed therein adjacent the closed end thereof and having a reduced diameter between said flange and said closed end, each section other than one end section having an outwardly extending annular flange formed at its open end firmly engaging the flange at the closed end of the next adjacent section, the end section having an annular flange at its open end, a flat closure firmly engaged by the flange on the terminal section, and each of said flanges being tightly crimped whereby the section joints are gas tight and the muffler assembly is made a self-supporting unit.

2. A muffler comprising a plurality of telescoping cup-shaped sections having perforated end heads, each of said sections having an outwardly extending flange formed thereon in spaced relation to its head and having that portion between the flange and the head of reduced diameter, the open end of each section other than one end section overlying said part of reduced diameter and having its free edge bent around said flange to firmly secure the sections together, and a flat closure for the end section having its peripheral portion firmly engaged by the outwardly extending flange of said end section and all of said flanges being tightly pressed into laminated gas tight joints, whereby a unitary self-supporting muffler is formed.

In testimony whereof, I affix my signature.

LEONHARD BAUROTH.