

D. D. HELDER.

MUFFLER.

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1,015,955.

Patented Jan. 30, 1912.

Fig. 1.

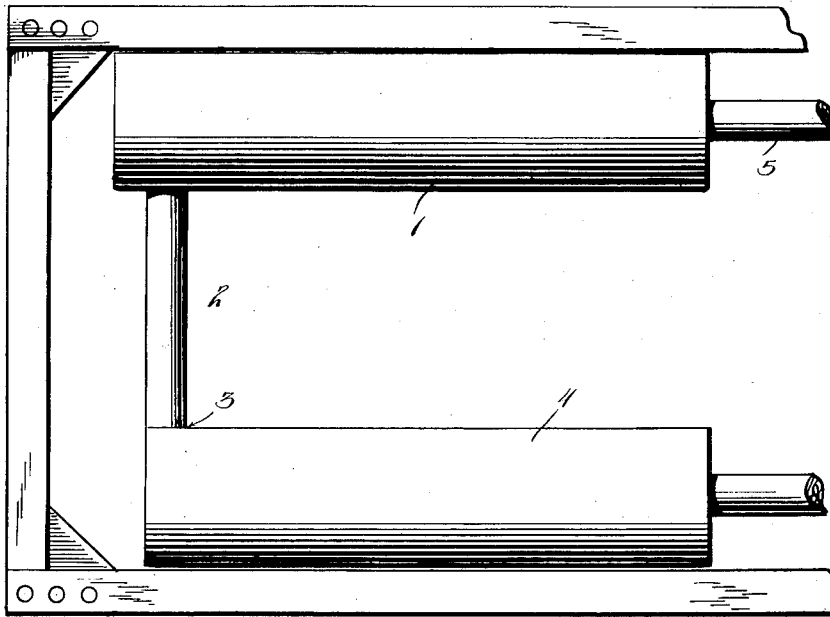


Fig. 2.

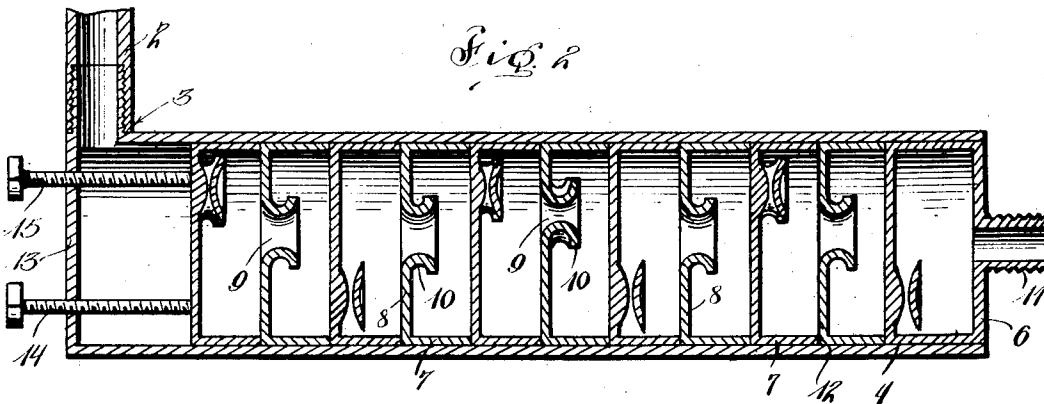


Fig. 3.

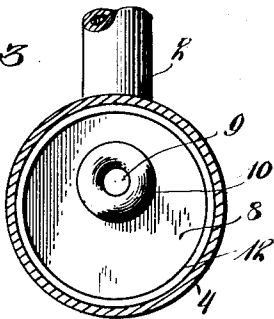
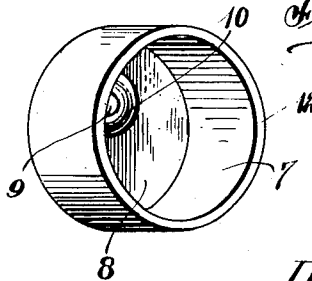


Fig. 4.



Witnesses

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MUFFLER.

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To all whom it may concern:

Be it known that I, DRAPER D. HELDER, a citizen of the United States, residing in Settlers township, in the county of Sioux and State of Iowa, have invented certain new and useful Improvements in Mufflers, of which the following is a specification.

My invention relates to improvements in mufflers, and has for its object the provision of an improved form of double muffler for use upon automobiles of the gasolene type.

The further object of my invention is the provision of an automobile muffler formed with an improved construction of muffler rings, which rings may be readily placed in correct position within the muffler and may be easily secured in said position.

Another object of my invention is the provision in connection with a muffler constructed from my improved muffler ring, of improved means for engaging the ring at one end of the muffler to firmly secure the entire set of rings of the muffler in position.

Other objects and advantages of my improved muffler will be readily apparent by reference to the following description taken in connection with the accompanying drawings and it will be understood that I may make any modifications in the specific structure shown and described within the scope of my claims without departing from or exceeding the spirit of the invention.

Figure 1 represents a top plan view of my complete double muffler. Fig. 2 represents a longitudinal sectional view of one of the cylinders of the mufflers. Fig. 3 represents a cross sectional view of the muffler, and Fig. 4 represents a perspective view of one of the muffling rings.

In the drawings, the numeral 1 designates the primary muffler cylinder casing, said casing having projecting from one side thereof the pipe 2 connected to the nipple 3 of the second cylinder casing 4 which has the discharge pipe 5 secured to the opposite end from that at which the nipple 3 is located.

Inasmuch as the interior construction of both of the mufflers of my double muffler is the same, I have shown the detailed construction of but one of the cylinders. Said cylinders have at one end a closure cap plate 6, while fitting within the cylinders are my improved muffling rings. Said rings comprise the collar portions 7 which fit

tightly against the inner faces of the cylinders 1 and 4, said collars having formed integral with one edge thereof the disks 8 provided with apertures 9 having the curved lip portions 10 which extend from the disks 8 around the apertures in the same direction that the collars 7 extend. It will be observed that the apertures 9 of the various disks are so disposed as to be out of alinement with each other, the expanding gases from the exhaust entering the muffler cylinder 1 through the pipe 11 and thence contacting with the curved lips 10 and pursuing a tortuous course through the various apertures 9 which are arranged out of alinement with each other, whereby the gases are thoroughly broken up into their component particles, said gases passing then through the second similarly constructed muffler cylinder and passing noiselessly out from the muffler discharge pipe 5.

By reference particularly to Fig. 2 it will be observed that the edge 12 of the collar 7 at the entrance end of the cylinder bears against the cap plate 6 and holds the disks 8 spaced therefrom, while the shoulders provided by the edges 12 of the various collars bear against the various disks 8 adjacent thereto to hold entire series of muffling disks in correct spaced relation.

To secure the disks in position within the muffler cylinder, I engage in the end plate 13 of the cylinder the threaded bolts 14 having their ends bearing against the rearmost disk 8 said bolts having heads 15 projecting from the plate 13, the turning of the bolts by grasping of the said heads serving to force the bolts tightly into engagement with the disks to press the various rings against each other and firmly secure the same in place.

From the foregoing description taken in connection with the drawings, the construction of my improved muffler will be readily understood, and it will be seen that on account of their construction, the muffler rings may be readily removed and interchangeably used, and it will be further observed that on account of the construction of the flat disks with their projecting collars, the disks provide engaging surfaces for the shoulders of the collars to prevent wedging of the rings against each other, while enabling them to be firmly secured in position, the flat disks of the endmost ring affording a satisfactory bearing surface for the ends of the securing clamp bolts.

I claim:

1. A muffler, comprising an inclosing cylinder having cap plates at each end, a plurality of muffler rings mounted within the cylinder and having disk portions having apertures formed therein surrounded by flaring lips, said disk portions having spacing collars formed on their periphery making tight engagement with the inner face of the cylinder and extending in the same direction as the flaring lips of the disks, whereby the edges of the various collars engage the adjacent disks to hold the disks in spaced relation, and clamping members passing through one of the cap plates and engaging the endmost muffler disk for forcing the various muffler rings tightly against each other and securing the same in position.

2. A muffler comprising a casing, muffler rings mounted within the casing and formed with integral collars for engaging the adjacent muffler ring to hold the same in spaced relation, and securing bolts having threaded engagement with the end of the casing and having their inner ends bearing against the end muffler ring, whereby the inward screwing of the bolts forces the rings tightly against each other and secures the same in position within the casing.

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

DRAPER D. HELDER.

Witnesses:

A. N. HELDER,
G. J. MOEN.