June 7, 1927.

1,631,391

J. W. WILLIAMS

MUFFLER

Filed Dec. 7. 1925

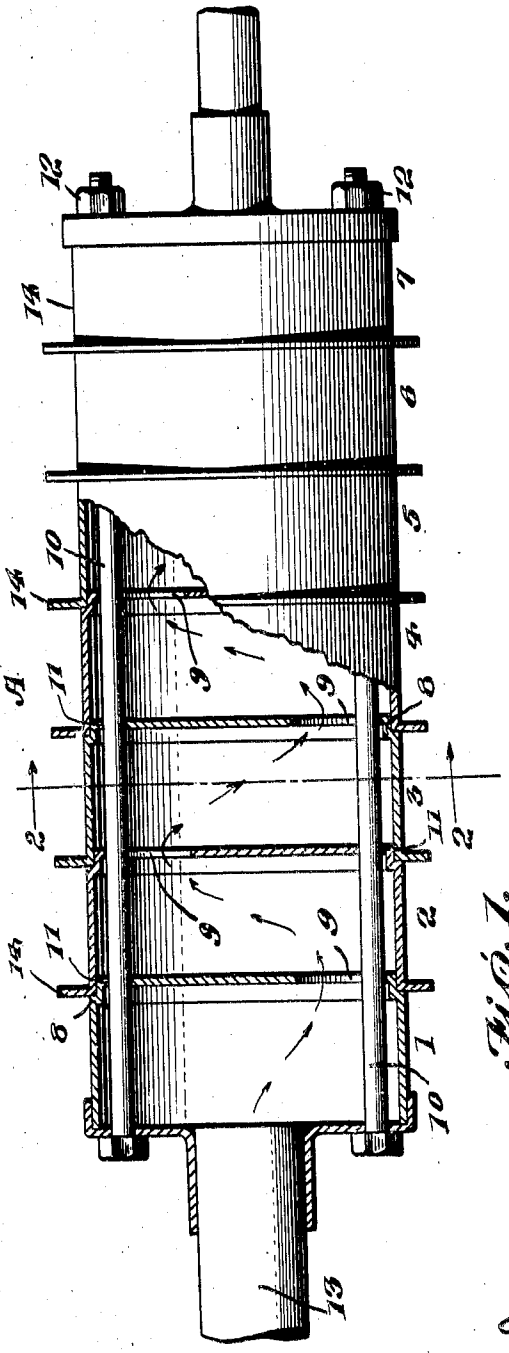


Fig. 1.

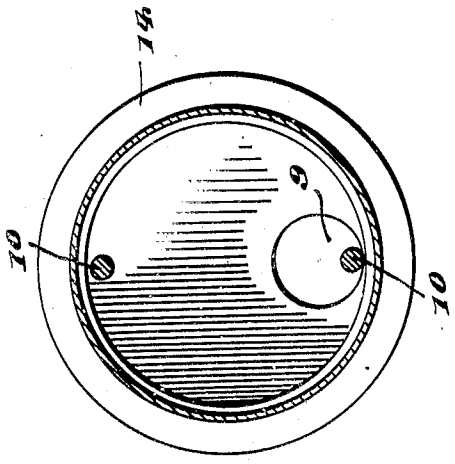


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN WARD WILLIAMS, OF BUFFALO, NEW YORK.

MUFFLER.

Application filed December 7, 1925. Serial No. 73,719.

My invention relates to an improvement in mufflers.

The present invention is of that type of mufflers generally used in connection with explosive engines.

This improved muffler is very efficient and is very simple and inexpensive to make and preferably consists of a plurality of cylindrical metal cups having openings through the bottoms and formed with an inset at the juncture of the sides and bottoms of the cups of a depth approximately corresponding to the thickness of the cups as a means for effecting a joint between the adjacent cups, which with their outer surfaces are in substantial alignment, means also being included for holding the several cups together.

In the accompanying drawings:—

Fig. 1 is a view partly in side elevation and partly in longitudinal section; and

Fig. 2 is a transverse section on the line 2—2 of Fig. 1, looking in the direction of the arrows.

A represents the muffler as a whole. This is composed of a plurality of cups, indicated by the numerals 1, 2, 3, 4, 5, 6 and 7, respectively.

These cups are preferably made of pressed steel and fit one into the other as shown in Fig. 1, that is to say, at the juncture of the cylindrical sides and the bottoms of the cups there is a peripheral inset 8 formed, of a depth preferably corresponding to the thickness of the metal forming the cups whereby each inset is adapted to receive the open end of the adjacent cup so that the outer surfaces in all the cups are flush with one another, to form one continuous cylindrical muffler when the several cups are assembled and securely fastened together.

The several cups composing the muffler are substantially alike. The bottom of each cup is provided with an opening 9 and these are alternately staggered, as viewed in Fig. 1, for the circuitous passage of the burnt gases, as indicated by the arrows in Fig. 1.

Rods 10 extend through these openings or passage-ways 9 and also through the holes 11 and have nuts 12 screwed on their threaded ends to rigidly secure the several cups together. The bottoms of the cups form baffles and permit the products to escape at the exhaust end. The end cup 1 is pierced through the center to receive the tail or exhaust pipe 13.

All the cups, except the first, No. 1, preferably terminate in an outwardly extending flange 14, the purpose of the flanges being to assist in radiating heat. The flanges 14 also greatly strengthen the device as they are located approximately in alignment with the bottoms of the cups. The heat will be absorbed by the bottoms of the cups and radiated by the outer shell, assisted by the flanges.

Obviously, any number of these cups so constructed might be coupled together according to the length of the muffler desired.

The parts which go to make up this muffler are simple and easily assembled as they are all made to fit one in another, thus making a simple, light, inexpensive, and efficient muffler.

Besides having the function of a muffler, this device makes a very effective heating drum or radiator as, by using one or more of these complete assemblies in series, a very large radiating surface is provided and the heating could be produced by forcing hot water, steam, or even hot air or products of combustion through the device for heating purposes.

I claim:

A device of the character described including a plurality of cup-shaped sections provided with outwardly extending flanges at their outer edges, the bottom portions of the sections having right-angle indentations in close proximity to the bottom edges of the sections to provide seats for the upper edges in such manner that the outer flanges are in approximately the same plane with the bottoms of the sections, suitable end sections and means for securing the several sections in their proper relationship.

In testimony whereof I affix my signature.

JOHN WARD WILLIAMS.