

No. 661,276.

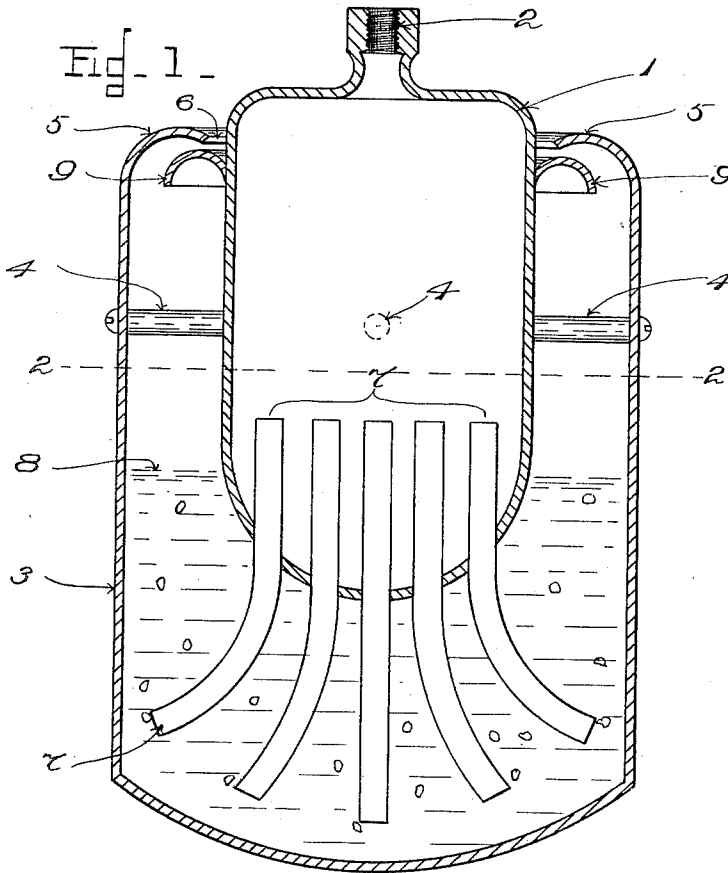
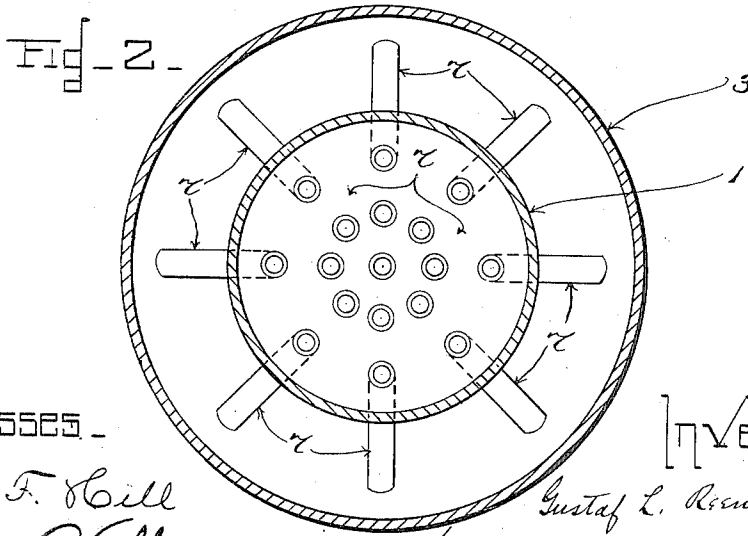
Patented Nov. 6, 1900.

G. L. REENSTIERNA.

MUFFLER AND PURIFIER FOR GASOLINE ENGINES.

(Application filed Oct. 12, 1899.)

(No Model.)



Witnesses -

Oscar F. Hill
Robert Wallace.

Inventor.

Gustaf L. Reenstierna
by Mackord Calver & Randall
Attorneys

UNITED STATES PATENT OFFICE.

GUSTAF L. REENSTIERNA, OF WINCHESTER, MASSACHUSETTS.

MUFFLER AND PURIFIER FOR GASOLENE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 661,276, dated November 6, 1900.

Application filed October 12, 1899. Serial No. 733,361. (No model.)

To all whom it may concern:

Be it known that I, GUSTAF L. REENSTIERNA, a citizen of the United States, residing at Winchester, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Mufflers and Purifiers for Gasolene-Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In the use of gasolene-engines there is a constant escape of refuse gases through the exhaust-pipe, which if discharged directly into the open air give off offensive odors and also usually produce a hissing sound.

15 The object of my invention is to provide an attachment to the engine whereby the refuse gases will be cleansed and freed from offensive odors before escaping into the open air and whereby also the sound of the escaping gases will be muffled.

My invention will now be fully described, and the novel features thereof will be particularly pointed out in the claims at the end of this specification.

25 In the drawings, Figure 1 is a vertical section, on line 1 1 of Fig. 2, of an apparatus embodying my invention. Fig. 2 is a horizontal section on line 2 2 of Fig. 1.

30 The bulb or chamber 1 is formed with a mouth 2, by which the bulb may be connected with the exhaust-pipe of a gasolene-engine and through which the refuse gases are conducted into the bulb. Surrounding the bulb 1 is a vessel or shell 3, which is secured to the bulb 35 in any suitable manner, as by the rods or stays 4, which may be bolted or otherwise securely fastened to the bulb and the shell, the neck of the bulb extending, preferably, above the shell, as shown. The shell 3 is closed at the 40 bottom and sides and is of sufficient size to form a hollow space below and around the sides of the bulb 1. The upper end of the shell 3 is formed with an inwardly-turned flange 5, which does not extend quite to the 45 bulb 1, but leaves an annular passage 6, leading from the interior of the shell to the outer air. A tubular conduit for the gases leads from the interior of the bulb, through the bottom or sides thereof, into the lower part 50 of the vessel 3. Preferably this conduit consists of a plurality of tubes 7 open at both ends, which pass through the bottom of the

bulb 1 and are suitably secured in position by soldering or otherwise, so as to form a plurality of small passages from the interior of the bulb to the lower part of the shell 3, the tubes preferably extending some distance below the bottom of the bulb and radiating outwardly from each other at their lower ends, so as to more widely distribute the gases when they pass from the bulb into the shell. The shell 3 is partially filled with water up to some point above the lower ends of the tubes 7, the level 8 of the water being lower than the upper ends of the tubes. The gases from the exhaust-pipe will pass into the bulb 1, thence through the tubes 7 and the water therein into the water in the shell. In passing through the water the gases will become decomposed or be freed wholly or in large part from their impure elements before passing up to the surface of the water, and they will rise quietly instead of making a disturbing sound. After rising to the surface of the water they will pass up through the shell and out through the annular opening 6 into the outside air noiselessly and free or substantially free from noxious or objectionable odors.

One use to which I purpose applying the attachment embodying my invention is to connect it with a gasolene-engine such as is employed for running motor-wagons. In order to prevent the water from splashing over the top of the shell or receiver 3 when the shell or receiver is jolted or shaken, as may occur when the wagon is in motion, I secure an annular flange 9 around the bulb near its upper end below the flange 5 of the said shell 3. This flange is suitably secured to the exterior of the shell or receiver in any well-known manner. If desired, the flange 9 may be located lower down on the bulb 1—that is, nearer the level of the water in the receiver 3—or more than one such flange may be employed, if desired, in which latter case one of said flanges may be located near the top of the bulb 1 and another lower down on said bulb or on the inner face of the wall of the receiver. In general, however, one such flange located on the bulb 1 will be found sufficient to prevent the water from splashing out of the shell or receiver 3.

Instead of water I may use in the receiver

3 any liquid having suitable absorbing or decomposing properties for the exhaust-gases.

What I claim is—

1. A muffler and purifier for connection
5 with a gasoline-engine, comprising a bulb into which the exhaust of the engine discharges, a vessel or receiver inclosing the said bulb and containing a quantity of liquid, a conduit leading from the interior of the bulb into
10 said vessel or receiver and discharging into said liquid, the said vessel or receiver having in its upper part a liquid-retaining flange or rim and a narrow or contracted opening adjacent said flange or rim, encircling the bulb,
15 and permitting the passage of the gases, substantially as described.

2. A muffler and purifier for connection with a gasoline-engine, comprising a bulb into which the exhaust of the engine discharges,
20 a vessel or receiver inclosing the said bulb and containing a quantity of liquid, a plurality of tubes leading from the interior of the bulb into said vessel or receiver and discharging into said liquid, the said vessel or re-

ceiver having in its upper part a liquid-re- 25 taining flange or rim and a narrow or contracted opening adjacent said flange or rim, encircling the bulb, and permitting the passage of the gases, substantially as described.

3. A muffler and purifier for connection 30 with a gasoline-engine, comprising a bulb into which the exhaust of the engine discharges, a vessel or receiver inclosing the said bulb and containing a quantity of liquid, a plurality of tubes leading from the interior of the 35 bulb and discharging into the liquid in said vessel or receiver; and overlapping flanges or rims at the upper part of said vessel or receiver having between them a contracted opening encircling the bulb, and permitting 40 the escape of the gases, substantially as described.

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

GUSTAF L. REENSTIERNA.

Witnesses:

WM. A. MACLEOD,
ALICE H. MORRISON.