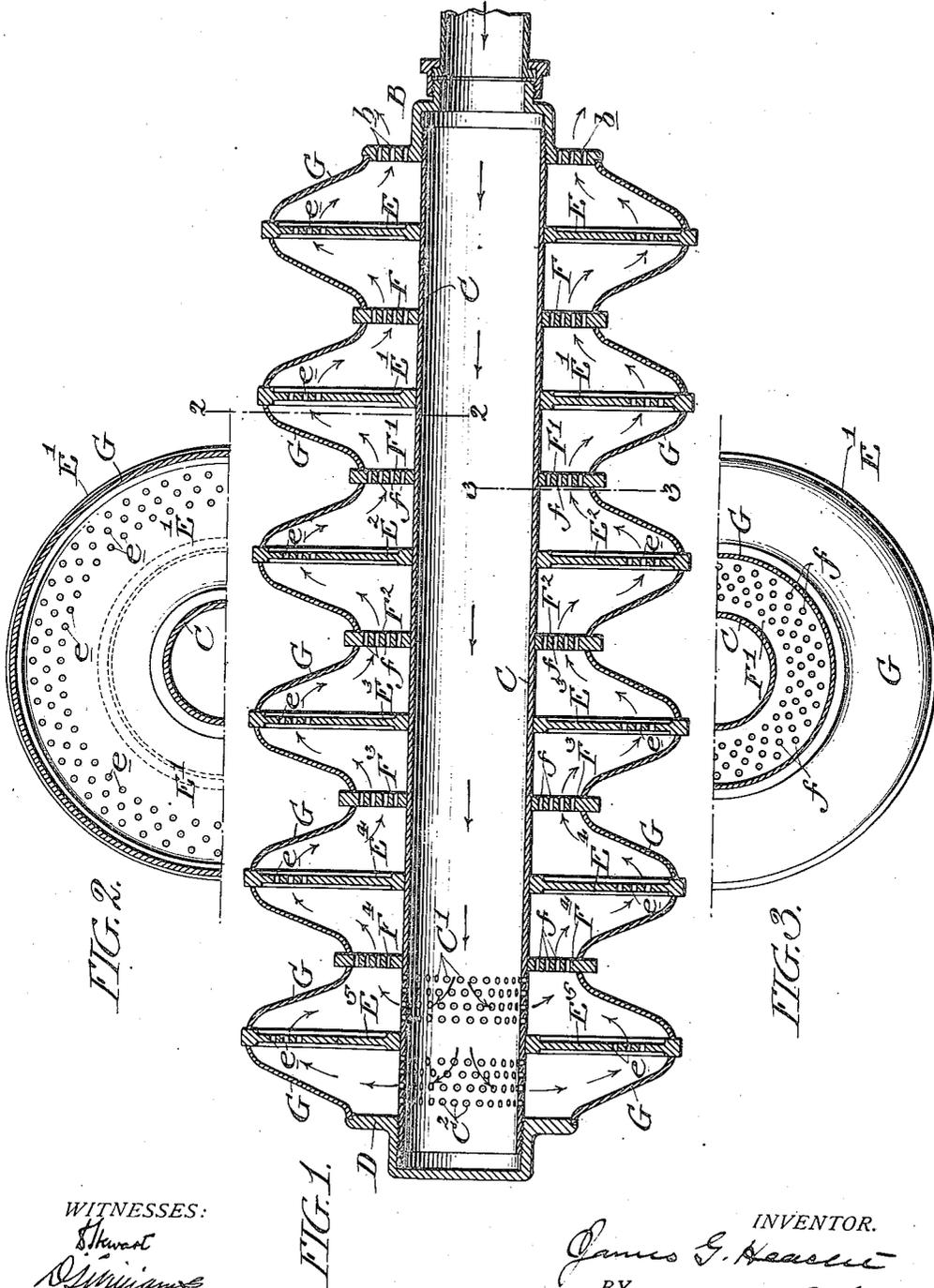


No. 783,835.

PATENTED FEB. 28, 1905.

J. G. HEASLET.  
MUFFLER.

APPLICATION FILED NOV. 14, 1903.



WITNESSES:  
*Stewart*  
*Williams*

INVENTOR.  
*James G. Heaslet*  
BY  
*James D. Chamberlain*  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

JAMES G. HEASLET, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND HARRY M. HART, OF PHILADELPHIA, PENNSYLVANIA.

## MUFFLER.

SPECIFICATION forming part of Letters Patent No. 783,835, dated February 28, 1905.

Application filed November 14, 1903. Serial No. 181,121.

*To all whom it may concern:*

Be it known that I, JAMES G. HEASLET, a citizen of the United States of America, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Mufflers, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to the construction of mufflers such as are used to diminish the noise of gas escaping from the exhaust of explosive and other engines, the object of my invention being to provide a muffler of simple and efficient construction, the nature of which will be best understood as described in connection with the drawings, in which it is illustrated, and in which—

Figure 1 is a longitudinal sectional view of the muffler in what I believe to be its best form of construction; Fig. 2, a cross-section through the upper half of the muffler, taken on the line 2 2 of Fig. 1; and Fig. 3, a cross-section through the lower half of the muffler on the line 3 3 of Fig. 1.

A indicates the exhaust-conduit leading from the engine and, as shown, coupled to a head B of the muffler, which in this construction is shown as provided with perforations, (indicated at *b*.) Also coupled with the head B and so as to form an extension, in effect, of the conduit A is the tube C, which in this construction acts both as a conduit and as a central body for the muffler, the said tube having at its rear end perforations C' C<sup>2</sup>, through which the gases escape into the muffler-chamber proper, and this rear end of the tube C is also secured to the rear head D of the muffler. Secured to the tubular body C are a series of plates E E' E<sup>2</sup> F F' F<sup>2</sup>, &c., of alternately the larger and smaller area, both sets of plates being formed with transverse perforations, as indicated at *f* and *e*, those of the larger plate being set out at *e* and being set at the outer edges of the plates, so as to be out of registry with the smaller edges of plates *f*. G G, &c.,

are the outer covering-plates making up the shell of the muffler, said plates uniting the edges of the plates E and F, and having as a whole a corrugated form.

In operation the exhaust-gases in the pipe A pass through the head B into the pipe C and thence through the perforations C' and C<sup>2</sup> into the rear chambers formed between the plate E<sup>2</sup> and the head D on one side and the plate F<sup>2</sup> on the other side. The gases then pass forward over the body C, passing alternately out to the perforation through the perforations *e* and in again through the perforations *f* until they reach the head B, from which they escape through the holes *b*.

It will be readily seen that my muffler embodies for breaking up the issuing force of the exhaust-gases both in the in and out motion which the gases are compelled to take and in their constant passage through relatively small orifices into comparatively large chambers. It will also be recognized that my muffler also provides a large cooling-surface, which largely extracts the heat of the gases and diminishes their consequent velocity, so that the gases will issue from the head B cooled and without sufficient impetus to create objectionable noise.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A muffler having in combination a central cylindrical body, a series of alternately-placed plates of large and relatively small area secured around the central body and formed with transverse perforations, those of the larger plates being near their outer edges only, an outer shell uniting the edges of the larger and smaller perforated plates and having a generally-corrugated form, an inlet for gas or vapor at one end of the muffler and an outlet at the other end.

2. A muffler having in combination a central tube, open at one end to receive the gas or vapor to be muffled and at the other to give passage for the same to the muffle-chamber, a

series of alternately-placed plates of large and relatively small area secured around the central tube, and formed with transverse perforations, those of the larger plates being near their outer edges, an outer shell uniting the edges of the larger and smaller perforated plates and having a generally-corrugated form, and an

outlet for the gases situated at the opposite end of the muffle-chamber to that which receives the same.

JAMES G. HEASLET.

Witnesses:

GEO. G. WHITCOMB,  
HART O. BERG.