

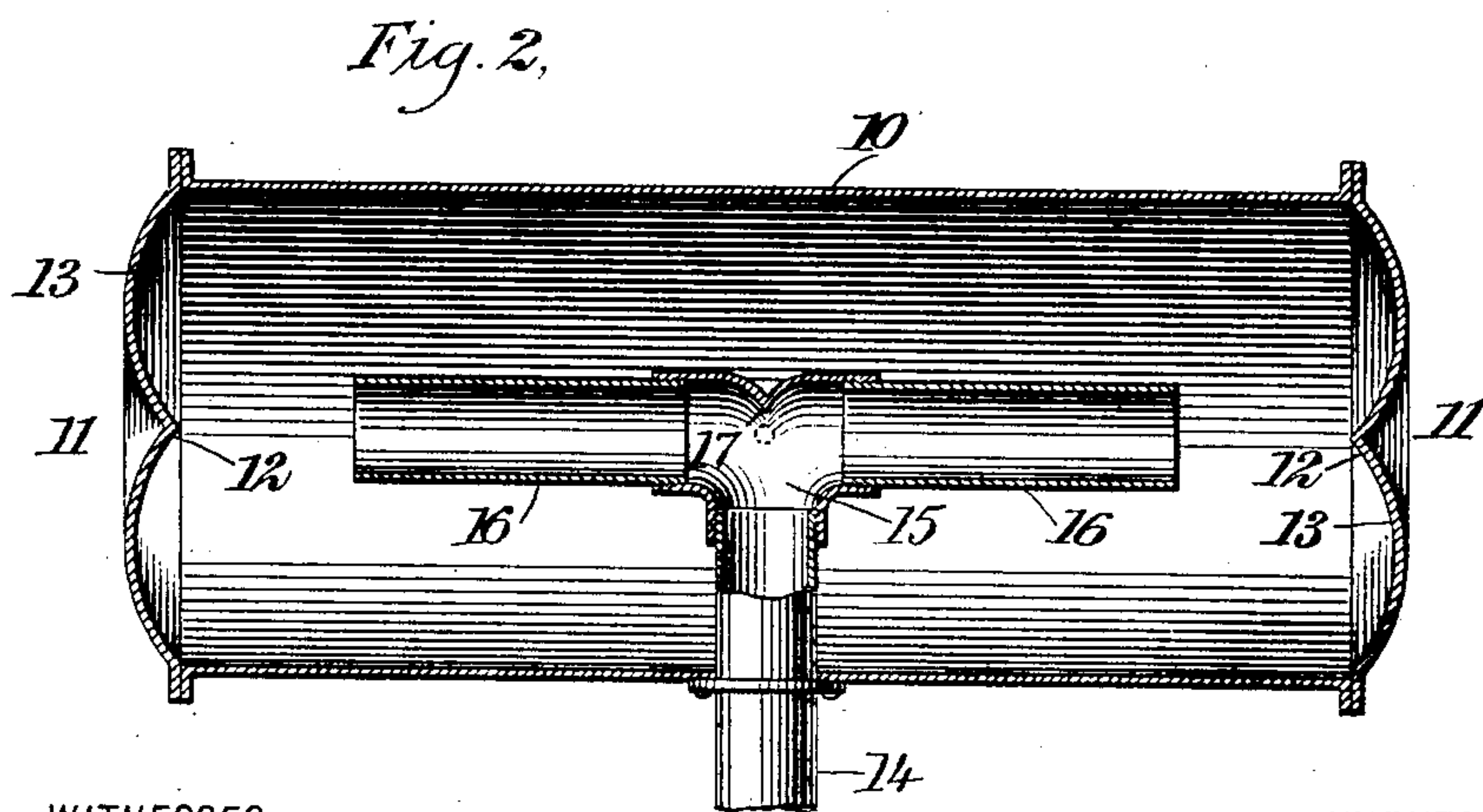
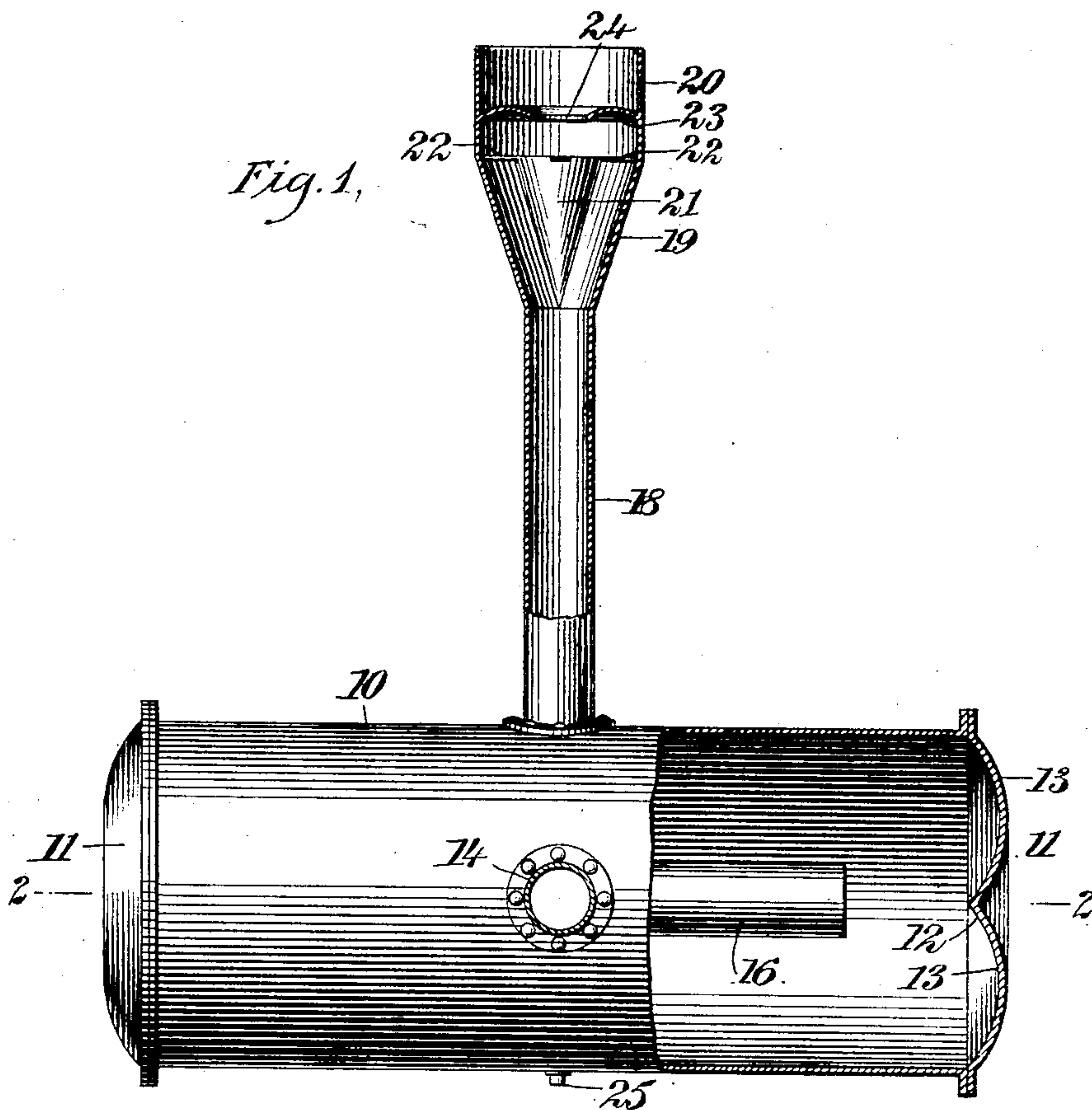
No. 763,221.

PATENTED JUNE 21, 1904.

I. B. ULLOM.
MUFFLER.

APPLICATION FILED FEB. 20, 1904.

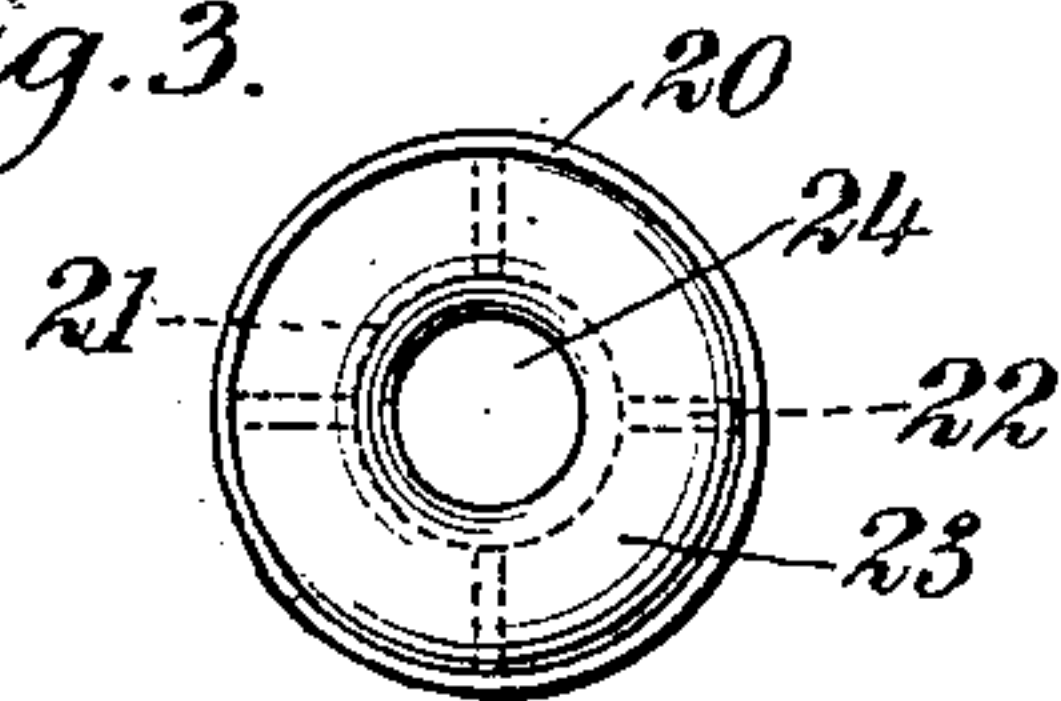
NO MODEL.



WITNESSES:

Edward Thorpe.
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Fig. 3.



INVENTOR

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MUFFLER.

SPECIFICATION forming part of Letters Patent No. 763,221, dated June 21, 1904.

Application filed February 20, 1904. Serial No. 194,503. (No model.)

To all whom it may concern:

Be it known that I, ISAAC B. ULLOM, a citizen of the United States, and a resident of Claysville, in the county of Washington and State of Pennsylvania, have invented a new and Improved Muffler, of which the following is a full, clear, and exact description.

My invention relates to apparatus for muffling the exhaust of engines, being particularly designed for use in connection with gas-engines.

It consists in the various features and combinations hereinafter described and more particularly claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of one embodiment of my invention, parts being broken away and in section. Fig. 2 is a horizontal section thereof on the line 2 2 of Fig. 1, and Fig. 3 is a detail in top plan of the outlet-pipe.

10 designates a casing, preferably of cylindrical form, at the opposite ends of which are secured heads 11 11, which in the present instance also furnish deflecting means, they being provided with a central conical projection 12, encircling which is a concave depression 13, with its outer edge terminating at the inner wall of the casing. Into this casing opens a main inlet pipe or conduit 14, preferably located substantially midway between the heads and lying in a horizontal plane, with its end extending for some distance into the casing. Upon the inner end of this inlet-pipe is a T-fitting 15, from the opposite ends of which lead branch pipes or conduits 16 16, preferably lying with their common axis coinciding with the axis of the cylinder or opposite the projection 12 of the heads.

Within the T opposite the inner opening of the pipe 14, with its apex substantially in the axis thereof, is a ridge or V-shaped projection 17, which acts to about equally separate the introduced gases or other substances and direct them into the branch pipes.

Extending vertically from the casing or approximately at right angles to the inlet-pipe

and in the same plane there is an outlet-pipe 50 or conduit 18, here shown as provided with an enlarged head, the lower portion 19 of which is of conical form, while above this rises a cylindrical portion 20. Within the head is a conical deflector 21, having its inclined wall substantially concentric with the inclined wall of the head and supported upon lateral bars 22, resting at the juncture between the two portions of the head.

Above the opening of the annular passage 60 formed between the deflector 21 and the head is located a deflecting-ring 23, having its edge in contact with the cylindrical portion of the head and its central opening 24 opposite the base of the cone. This ring is dished or concavo-convex in section, with the concave side turned toward the annular passage. From the casing, here shown as near the center thereof, opens a contracted drip-pipe 25.

The operation of the apparatus is as follows: 70 The exhaust is introduced through the main inlet-pipe and upon striking the projection in the T is about equally divided and passes out through the branch pipes into the casing, where it expands, losing some of its force, and 75 impinges against the casing-head, striking upon the walls of the conical projection and being deflected in all directions back toward the center of the casing, where the two portions meet and mix, whereby further deaden- 80 ing effect is secured. The exhaust then rises through the outlet-pipe and is deflected by the cone within the head and is directed against the ring, the concavity of which tends to return it toward the casing. These impacts in 85 the head further deaden its sound, and it escapes through the opening of the ring practically without noise.

Having thus described my invention, I claim as new and desire to secure by Letters Patent— 90

1. In a muffler, the combination with a casing provided with opposite heads, of a single inlet-conduit entering the casing and extending toward said heads, and means for directing introduced substances toward the opposite 95 site heads.

2. The combination with a casing, of an inlet-conduit entering the casing and dividing

to extend in opposite directions, and opposed deflecting members situated at the ends of the conduits.

3. The combination with the casing, of a main inlet-conduit entering the casing, and having branch conduits extending in opposite directions therefrom, each of said branch conduits being provided with a V-shaped projection located with its apex substantially in the axis of the main conduit.

4. The combination with a conduit, of a conical deflector situated therein, and forming with the conduit an annular passage, and a concave ring supported in the conduit with its concave cavity turned toward the annular passage.

5. The combination with a casing, of an inlet-conduit entering the casing and extending in opposite directions, an outlet-conduit opening from the casing between the opposite ends of the inlet-conduit, and means situated adjacent to the ends of said inlet-conduit for directing the separated currents back toward the outlet-conduit to commingle with one another.

6. The combination with a casing, of a main inlet-conduit entering the casing and having branch conduits extending in opposite directions therefrom, and an outlet-conduit leading from the casing between the openings of the branch conduits.

7. The combination with a casing, of a main inlet-conduit entering the casing and having branch conduits extending in opposite directions therefrom, and an outlet-conduit leading from the casing between the openings of

the branch conduits, and a deflector situated opposite the end of each branch conduit.

8. The combination with a casing, provided with a head having a central projection and an encircling convex depression, of an inlet-pipe discharging toward said head projection, an outlet-pipe opening from the side of the casing and provided with an enlargement and a deflector within the enlargement, forming therewith an annular passage.

9. The combination with a casing, provided with a head having a central projection and an encircling convex depression, of an inlet-pipe discharging toward said head projection, an outlet-pipe opening from the side of the casing and provided with an enlargement, a deflector within the enlargement forming therewith an annular passage, and a deflecting-ring opposite the outer end of said passage.

10. The combination with a casing, provided with opposite heads each having a central projection and an encircling concave depression, of a main inlet-pipe opening into the casing substantially midway between the heads, branch inlet-pipes discharging toward each head projection, an outlet-pipe opening from the casing in the plane of the main inlet-pipe, and a deflector in the outlet-pipe.

In witness whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ISAAC B. ULLOM.

Witnesses:

JNO. H. LAIRD,

GEO. B. SPROWLS.