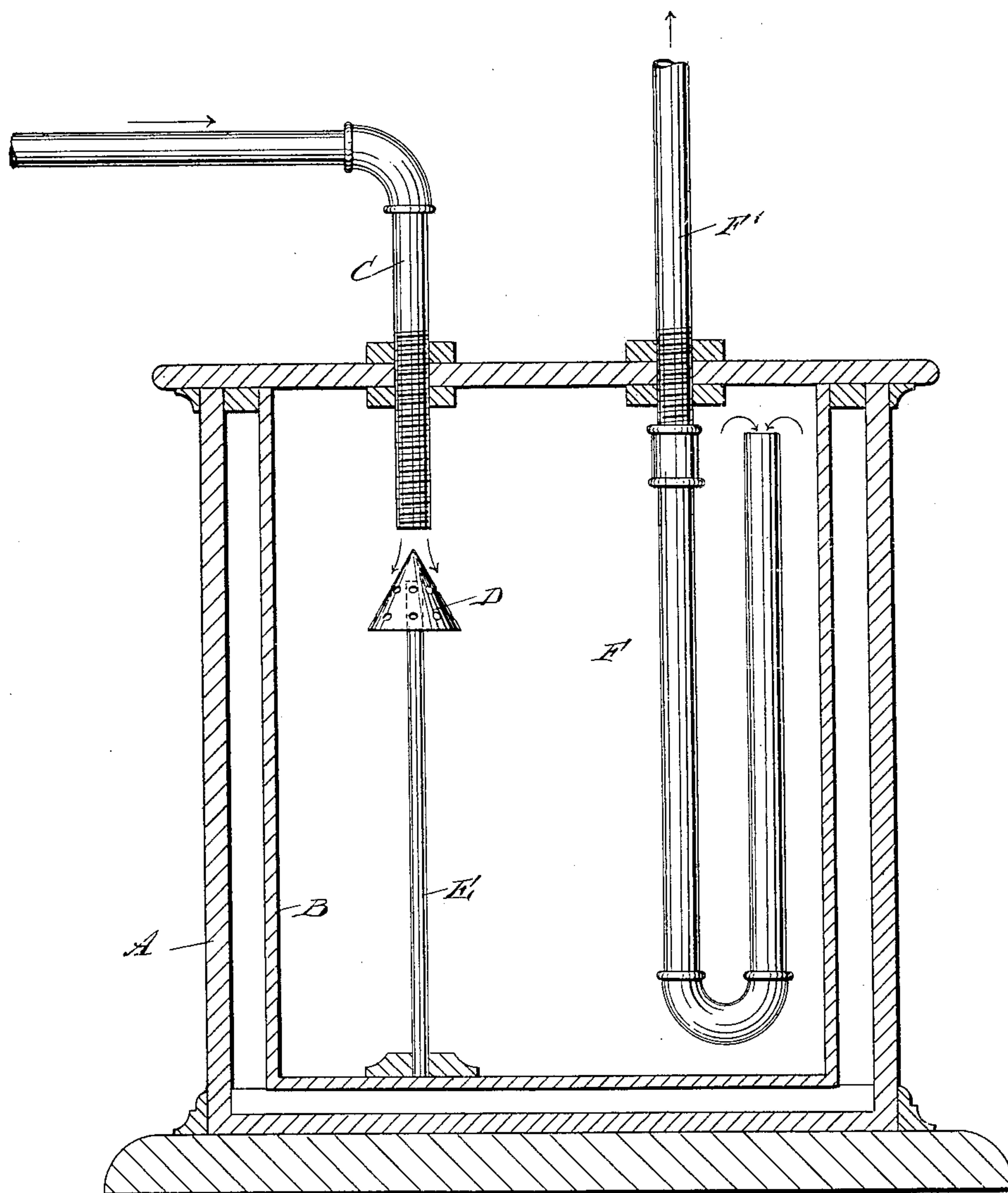


(No Model.)

C. S. BIRD.
MUFFLER FOR GAS ENGINES.

No. 598,845.

Patented Feb. 8, 1898.



WITNESSES:

H. Kelly
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BY *Munn*
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UNITED STATES PATENT OFFICE.

CHARLES S. BIRD, OF JACKSON, MICHIGAN, ASSIGNOR OF ONE-HALF TO
HENRY C. RANSOM, OF SAME PLACE.

MUFFLER FOR GAS-ENGINES.

SPECIFICATION forming part of Letters Patent No. 598,845, dated February 8, 1898.

Application filed February 20, 1897. Serial No. 624,333. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. BIRD, of Jackson, in the county of Jackson and State of Michigan, have invented a new and Improved Muffler for Gas-Engines, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved muffler, more especially designed for use in gas and other explosion engines and arranged to obviate the undesirable noise now caused by the burned gases or products of combustion being directly exhausted into the air, the muffler avoiding all back pressure of the engine.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure represents a sectional side elevation of the improvement.

The improved muffler is provided with a casing A, in which is suspended a vessel B, connected with the outer end of the exhaust-pipe C of the gas or other explosive engine, so that the gases or burned products of combustion pass from the engine through the pipe C to be discharged upon the cushion of air confined in the said vessel B. Directly under the outlet of the pipe C within the vessel B is arranged a conically-shaped spreader D, preferably formed with apertures in its wall and supported near the end of the pipe C by a post E, attached to the bottom of the vessel B. The products of combustion pass directly from the pipe C upon the apex end of the spreader D, so that the gases are deflected and spread within this vessel B, it being un-

derstood that the particles of the gases come in contact with the air contained in the vessel, so that all noise is prevented and back pressure is not liable to take place, as the gases have sufficient room within the vessel B to expand. A U-shaped outlet-pipe F extends within the vessel B and is connected with a pipe F', leading to the outer air, so that the gases expanded within the vessel B are readily passed out of the same in a steady stream by way of the pipe F'.

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

1. A muffler for gas-engines, comprising a casing, a vessel suspended in the casing and into which projects the exhaust-pipe of the engine, and a conical spreader supported in the vessel below and adjacent to the end of the exhaust-pipe, substantially as and for the purpose set forth.

2. A muffler for gas-engines, comprising a vessel into which projects the exhaust-pipe of the engine, said vessel having an outlet, and a conical spreader supported in the vessel below and adjacent to the end of the exhaust-pipe and provided with apertures, substantially as described.

3. A muffler for gas-engines, consisting of a casing, a vessel suspended in the casing and into which leads the exhaust-pipe of the engine, a conical spreader in the vessel adjacent to the end of the exhaust-pipe, and a U-shaped outlet-pipe in the said vessel and leading to the outer air, substantially as herein shown and described.

CHARLES S. BIRD.

Witnesses:

CHAS. H. SMITH,
ALLIE B. CLAY.