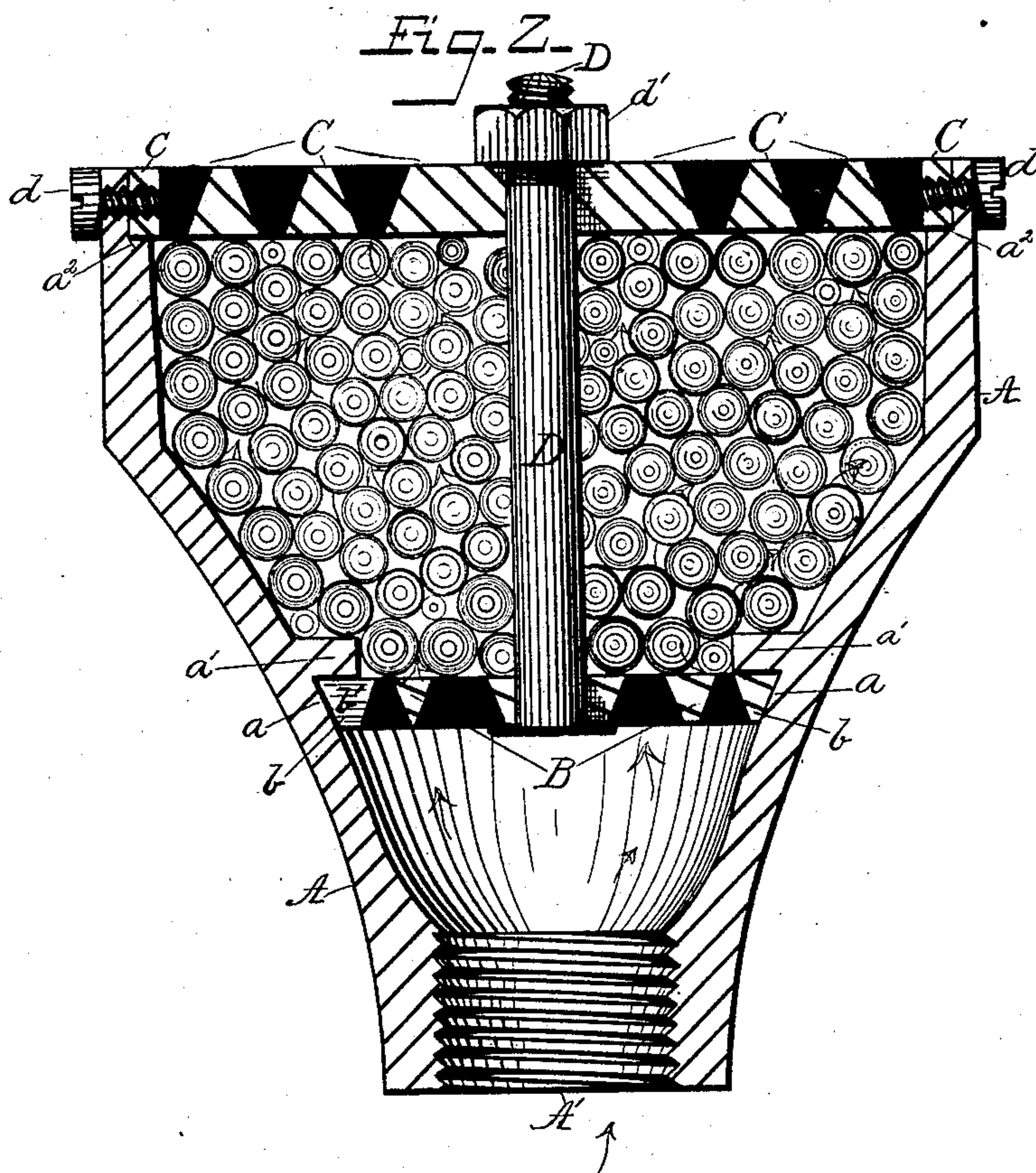
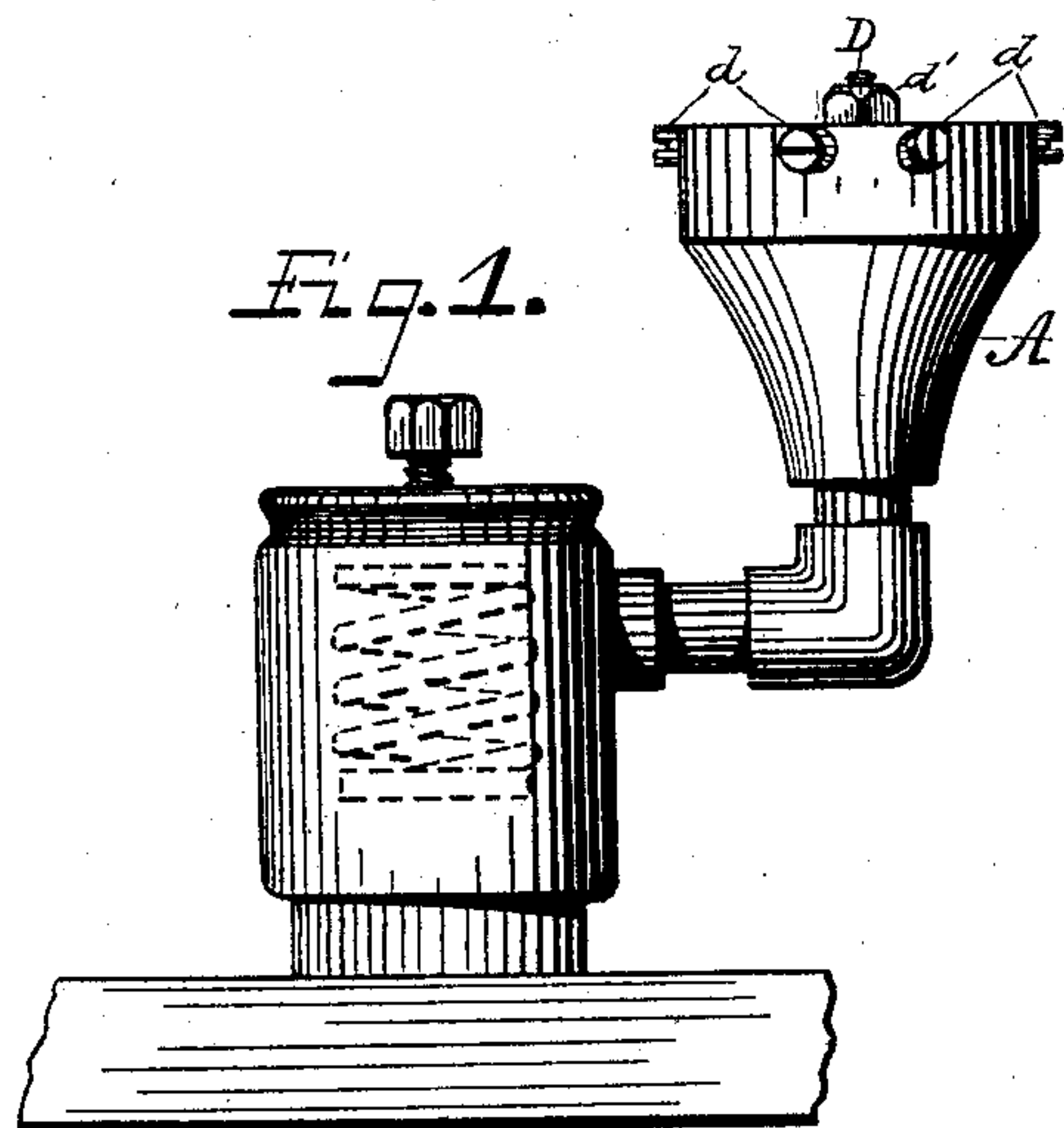


(No Model.)

G. F. ROYER.  
STEAM MUFFLER.

No. 379,608.

Patented Mar. 20, 1888.



Witnesses,  
J. B. Johns.  
J. H. Blackall.

Inventor,  
George F. Royer.

By his Attorney.

Henry H. Gamett



# UNITED STATES PATENT OFFICE.

GEORGE F. ROYER, OF WILKES-BARRÉ, PENNSYLVANIA.

## STEAM-MUFFLER.

SPECIFICATION forming part of Letters Patent No. 379,608, dated March 20, 1888.

Application filed December 7, 1887. Serial No. 257,209. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE F. ROYER, a citizen of the United States, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Mufflers for Steam or Gas Under Pressure; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improvement in steam-mufflers; and my said invention consists in certain details of construction and arrangement of the parts composing the same, as and for the purposes as will be hereinafter more particularly described and form the subject-matter of the annexed claim.

The object of my invention is to render noiseless the escape of steam, gas, &c., under pressure from steam-boilers, gas-engines, &c.; and to this end I proceed as follows, reference being had to the accompanying drawings for a better understanding of the details of construction of the parts, and in which drawings—

Figure 1 represents a view in elevation of an Ashton safety-valve supplied with a steam-muffler constructed according to my invention, and Fig. 2 represents a vertical central sectional elevation of the muffler, showing the internal construction and arrangement of the same.

A designates the case or shell of the muffler, which is of an inverted-cone shape, and is supplied with a screw end, A', for connection with the escape-port of a safety-valve, as shown in Fig. 1, or to any other suitable position upon the engine or boiler. This case or shell, as just stated, is of an inverted-cone shape, and within the interior thereof, near the bottom end, is formed a conical seat, *a*, just above which project lugs *a'*. At the top of this case a shoulder or circumferential seat, *a*<sup>2</sup>, is formed, and through the top edge thereof project a series of screws, *d*, for the purposes as will presently appear.

Resting upon the conical seat *a*, and beneath the lugs *a'* at the bottom of the case A, is a perforated plate or grating, B, which has a beveled circumferential edge, *b*, to adapt it to closely fit the seat *a*, and a slot, *b'*, in its rim to

enable it to be inserted past the lugs *a'*. At the top of the case, upon the seat *a*<sup>2</sup>, is a second perforated plate or grating, C, which is secured in position by a series of screws, *d*, passing through the top edge of the case and into the periphery of the grate C. Centrally through the gratings B and C passes a bolt, D, having a nut, *d'*, whereby the two grates are strengthened at their central portion and their displacement from the case prevented. Between the gratings B and C is placed the material for disintegrating and rendering the escaping steam or gas noiseless, and for this material small pebbles or round marbles are preferred, which are closely packed between the said gratings and completely fill the intervening space thereof.

The volume of steam, gas, &c., escaping under pressure from the boiler or engine in passing through the muffler is broken up or disintegrated into numerous fragments which are diverted back and forth around the pebbles, and thereby rendered noiseless before it escapes into the atmosphere.

The cone-shaped case permits a large area of the pebbles to be presented to the steam, and by reason of the construction of the parts herein shown a simple and effective muffler is provided, not liable to get injured or out of repair, and that may be readily taken apart for renewal, cleaning, &c.

Having thus fully described my invention, what I claim is as follows, viz:

In a steam-muffler, the combination, with the inverted-cone-shaped case A, formed with the seat *a*<sup>2</sup>, beveled seat *a*, and lugs *a'*, the circular grating B, with bevel edge *b*, fitting upon the seat *a* and beneath the lugs *a'*, and formed with the slot *b'*, circular grating C, of larger diameter than the one B, resting upon the seat *a*<sup>2</sup>, and secured to said case by screws *d*, bolt D, passing centrally through the gratings B and C, and securing the same together, and interposed filling of pebbles, as described, for the purposes specified.

GEORGE F. ROYER.

In presence of—

H. R. GLACE,  
C. R. ROYER,  
S. J. STRAUSS.