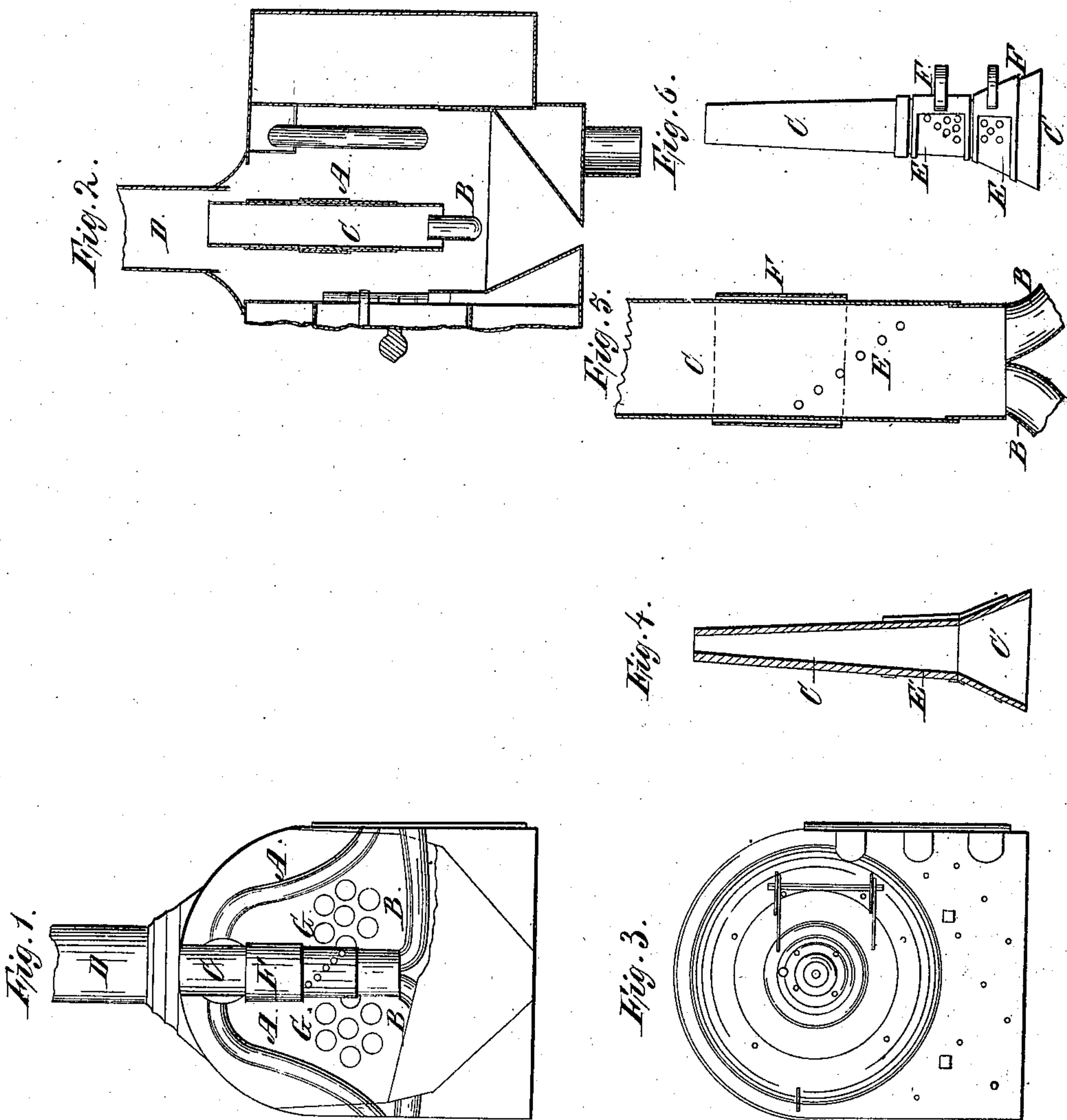


*P. H. Corlett,*

*Exhaust Mechanism for Locomotives.*

*N<sup>o</sup> 40,555.*

*Patented Nov. 10, 1863*



*Witnesses:*  
*J. Brainerd*  
*Wm. H. Corlett.*

*Inventor:*  
*Philip H. Corlett*

# UNITED STATES PATENT OFFICE.

PHILLIP H. CORLETT, OF WEST MANCHESTER, PENNSYLVANIA.

## IMPROVED DRAFT-REGULATOR FOR LOCOMOTIVES.

Specification forming part of Letters Patent No. 40,555, dated November 10, 1863.

*To all whom it may concern:*

Be it known that I, PHILLIP H. CORLETT, of West Manchester, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Locomotives; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front view, with a portion of the front plate removed, showing the interior of the smoke box and the escape-pipe. Fig. 2 is a front view showing the front plate and door closed. Fig. 3 is a vertical section, and Figs. 4, 5, and 6 are detached parts.

My invention relates to the construction and arrangement of devices for regulating and controlling the draft through the fire-box and flues by means of the escape steam.

In Figs. 1 and 2, A represents the pipes that convey the steam from the boiler to the steam-chest upon the cylinder, and B represents the pipes that convey the exhaust-steam into the escape pipe C. This pipe C extends upward to or into the base of the stack D. For light-draft engines the exhaust-pipe C may terminate an inch or two below the base of the stack. For heavy-draft the pipe may terminate just at the base of the stack, or extend an inch or two into it. The exhaust-pipe may be straight, as in enlarged Fig. 5, or it may be cone-like at the bottom, as in Figs. 4 and 6. I prefer the latter form. Just above the lower end, where the pipes enter, as shown at B B, the pipe C is perforated with from ten to fifteen holes, E, having a diameter of about three eighths of an inch, and passing through the metal obliquely upward, as seen in section, Fig. 4, at E'. These holes are opened and closed at pleasure by means of a thimble circular slide, or valve, F, which can

be operated by a rod from the cab. The holes E, instead of being formed in the circular part of the escape pipe, may be formed through a flat surface at the lower end of the pipe C and covered by a slide valve. There are a number of modifications of this part which might be introduced and used with the same effect as that before described, and which embrace the same general principle.

The smoke-box is intended to be practically air-tight, with the exception of the necessary openings, and the exhaust-pipe C occupies about the center. The flues G, which lead from the fire-box to the smoke-box, of course terminate in the smoke box.

Now, the operation of this improvement is as follows: If a light draft is desired, I close the holes E by the movement of the valves F, so as to cover the holes. If a strong draft is required, I open the holes by such a movement of the valves as to uncover the holes E, and the strength of the draft is regulated by the number of holes that are closed or unclosed, the less number of holes that are opened causing a light draft, and the strength of the draft increasing as more and more holes are opened. In this way the engineer has complete control of the draft and can change it in a moment when desirable, and thus procure just sufficient draft to produce complete combustion of the fuel, without raising the cinders from the fire-grate, resulting in the saving of a large amount of fuel.

What I claim as my improvement, and desire to secure by Letters Patent, is—

Providing the escape-pipe C with openings or holes E and valves F, operating substantially as and for the purpose specified.

PHILLIP H. CORLETT.

Witnesses:

J. BRAINERD,

WM. K. CORLETT.