E. CLEMONS.
Smoke-Stack.

No. 209,231. Patented Oct. 22, 1878.

Fig. 1.

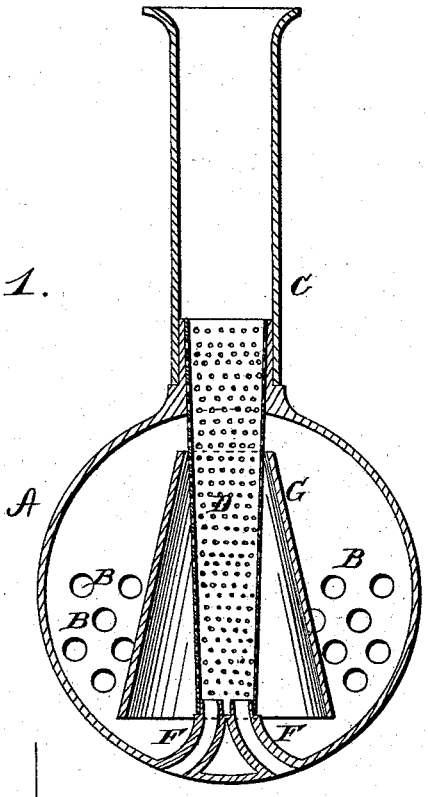
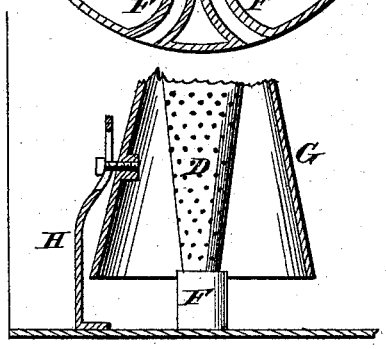


Fig. 2.



WITNESSES
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EVERETT CLEMONS, OF PEKIN, ILLINOIS.

IMPROVEMENT IN SMOKE-STACKS.

Specification forming part of Letters Patent No. **209,231**, dated October 22, 1878; application filed September 12, 1878.

To all whom it may concern:

Be it known that I, EVERETT CLEMONS, of Pekin, in the county of Tazewell, and in the State of Illinois, have invented certain new and useful Improvements in Smoke-Stacks; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a smoke-stack and spark-arrester for locomotives, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a central vertical section of my invention. Fig. 2 is a detailed section of a part thereof.

A represents the ordinary combustion-chamber at the end of the boiler, with the flues B B entering therein. C is the smoke-stack proper, which is simply a straight pipe of the same diameter as the cylinder of the engine to which it is attached, and containing no cone or webbing in the top of the stack.

I substitute for what is now known as the "petticoat-pipe" a conical perforated pipe, D, extending from the exhaust-nozzles F F to the saddle of the smoke-stack. The lower or small end of this pipe D may be made oblong or round, as the case may require, to fit tightly around the nozzles. The upper or large end enters the base of the smoke-stack a sufficient distance to support itself.

Attached to the conical pipe D is an inverted funnel or flounce, G, made preferably in two sections for convenience of adjustment, and supported by an arm, H, attached to the case A. This flounce clasps the conical pipe D some six inches (more or less) below the saddle of the smoke-stack, and extends down to nearly on a line with the top of the nozzles F, regulating the draft and forming no obstruction for the exhaust-steam, ashes, and cinders to pass out of the stack.

Steam generates so rapidly by the use of this device that a much larger nozzle in the exhaust-pipe can be used, thereby allowing the engine to clear itself of the exhaust-steam more freely. The exhaust-steam, passing out of the nozzles vertically, draws the ashes and cinders diagonally through the conical pipe, breaking them so fine that no possibility of damage from fire can occur.

It also obviates the necessity of carrying such a heavy fire as is required on engines using the ordinary devices, thereby preventing the clinking of bituminous coal, which tends to burn out the grate-bars.

The uniform draft causes uniformity of heat throughout the fire-box, thereby preserving the stay-bolts, side sheets, and flues.

The conical perforated pipe D, acting as a spark-arrester, and the flounce G, regulating the draft, enable me to dispense with the use of the cone and netting now in use on bell-top stacks, and dispensing with such cone and netting leaves no obstruction in the stack, giving a natural draft, and causing the steam to generate more rapidly when firing up the engine.

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

In combination with the stack C and exhaust-nozzles F, the perforated pipe D and flounce G, said pipe and flounce being tapered in opposite directions, and constructed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of August, 1878.

EVERETT CLEMONS.

Witnesses:
JAMES M. JAMES,
W. S. BANKIN.