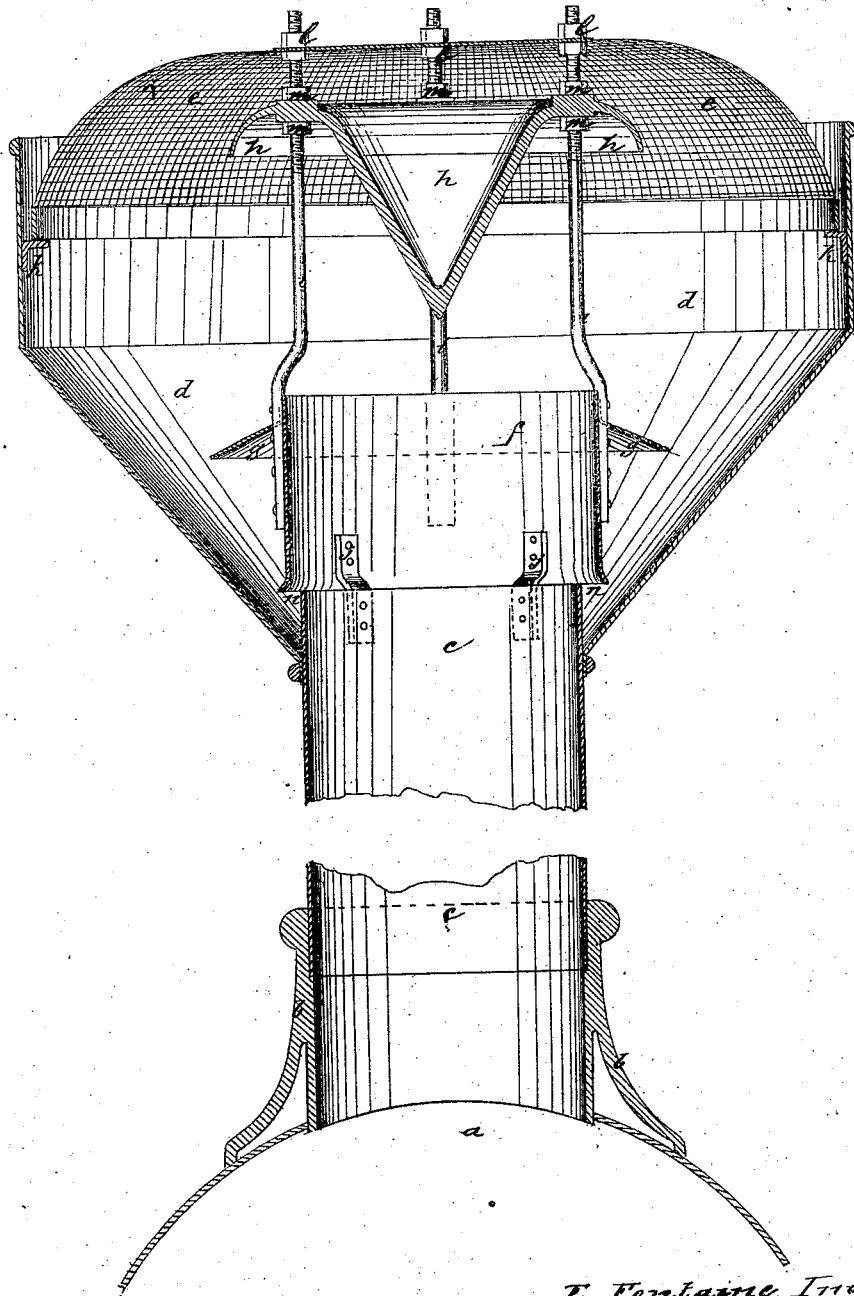


Eugène Fontaine.

108899

Stroke-Stack. PATENTED NOV 1 1870



E. Fontaine, Inventor.
Witnesses: *H. J. Tsch...* by *René V.C.*
L. A. Petit his Attorneys.

United States Patent Office.

EUGENE FONTAINE, OF FORT WAYNE, INDIANA, ASSIGNOR TO HIMSELF
AND WILLIAM A. ROBERTS, OF SAME PLACE.

Letters Patent No. 108,899, dated November 1, 1870.

IMPROVEMENT IN LOCOMOTIVE SMOKE-STACKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EUGENE FONTAINE, of Fort Wayne, in the county of Allen and State of Indiana, have invented a new and improved Smoke-Stack; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

The figure is a transverse vertical section.

This invention relates to an improvement in the smoke-stacks of coal and wood-burning locomotives, and consists in securing a cylinder, with a flange, to the pipe within the head of the stack, and arranging it in combination with an inverted diverging flanged cone or deflector, in such a manner that the sparks from the fire-box are carried up through the said cylinder by the steam from the exhaust-pipes of the engine, and, striking the cone, are thrown down the outside of the cylinder upon the converging bottom of the head of the smoke-stack, so as to come beneath an opening between the cylinder and the inside pipe, where it is again carried up through the cylinder until it strikes the deflector, and is thrown down in the same manner, this process being repeated until the sparks are extinguished by the steam, and beaten to dust by being carried against the cone, after which the portion not consumed is finally carried out through the bonnet; the object of the invention being to consume the sparks from the engine.

In the drawing—

- a* is the top of one end of the boiler;
- b*, the saddle in which the pipe *c* rides;
- d*, the head of the stack; and
- e*, the bonnet.

f is the cylinder, provided with the flange *g*.

h is the deflector.

i i i are supporting-rods, the bottoms of which are riveted to the top of the cylinder *f*.

The deflector *h* is secured to the brackets *i* by nuts *m*, above and below it.

The cylinder *f* is secured to the pipe *c* by brackets *j j*.

The bonnet *e* rests upon the angle-iron *k*, and is securely fastened to the supporting-rods *i* by nuts *l*, above and below it.

The sparks are carried up through the pipe *c* and cylinder *f* by the steam from the exhaust-pipes of the engine, and strike the deflector *h*, when they are thrown down by the curved flange of said deflector, and fall upon the converging bottom of the head *d*, so as to come beneath the opening *n* between the cylinder *f* and top of pipe *c*, when they are again carried up by the steam, and thrown down, as before.

The steam sometimes causes the sparks to rise from the bottom of the head *d* outside of the cylinder *f*. When this occurs the sparks strike the flange *g*, and fall back and are carried up through the opening *n*, and finally through the bonnet *e*.

Having thus described my invention,

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

The cylinder *f* and pipe *c*, the former surmounting the latter, in combination with the head *d* and deflector *h*, substantially as described.

EUGENE FONTAINE.

Witnesses:

SOLON C. KEMON,
THOS. D. D. OURAND.