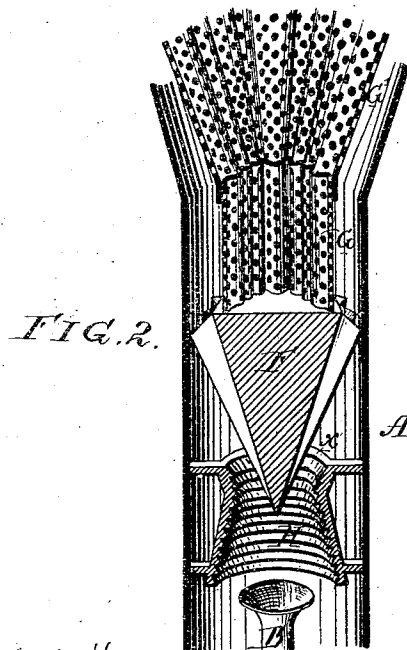
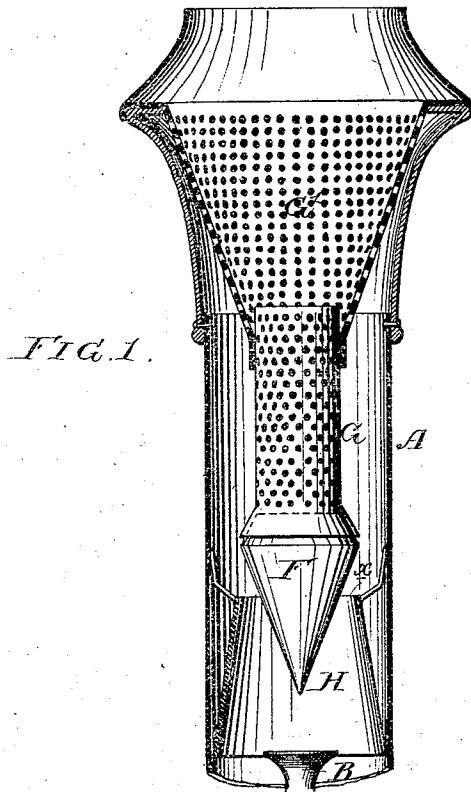


G. W. WAITT.
Locomotive Chimneys.

No. 153,407.

Patented July 21, 1874.



Witnesses, Hubert Howson
Harry Smith

Geo. Washington Waitt
by his Atty.
Howson and Son.

UNITED STATES PATENT OFFICE.

GEORGE W. WAITT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, EZEKIAL C. SHAPLEY, AND CHAS. F. JONES, OF SAME PLACE.

IMPROVEMENT IN LOCOMOTIVE-CHIMNEYS.

Specification forming part of Letters Patent No. **153,407**, dated July 21, 1874; application filed January 13, 1874.

CASE B.

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON WAITT, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Locomotive-Chimneys, of which the following is a specification:

My invention relates to improvements in the spark-arrester for which Letters Patent No. 143,931, were granted to Jackson Richards and Jacob Meehl, on the 21st day of October, 1873; and the objects of my improvements are, first, to readily adjust the obstruction described in the said patent to such an altitude as circumstances may demand; and, secondly, to expand or contract the annular space in the chimney for the passage of the exhaust steam, gases, and sparks.

Figure 1 is a vertical section of a locomotive-chimney with my improvement, A being the outer casing of the chimney, and F the obstruction, which may be similar to that described in the aforesaid Patent No. 143,931, and which is placed in the chimney for the purpose of neutralizing the forcible pulsations of exhaust steam, thereby preventing the escape of large masses of ignited fuel from the fire-place of the boiler and through the tubes, the sparks to be discharged into the chimney being consequently diminished both in size and quantity.

In the said patent of Richards and Meehl this obstruction F is a permanent fixture; but it is advisable to make it adjustable vertically so that it can be placed at such an altitude above the top of the petticoat-pipe B as to insure the best results.

The difference in the chimneys of different locomotives is so great that what is a proper position for the obstruction in one chimney would be entirely inappropriate in another.

The obstruction F is attached to the lower end of the cylindrical portion G of the screen, and this cylinder is so adapted to the lower end of the flaring portion G' of the screen, that the former can be adjusted vertically in the latter to any desired altitude—in other words, the screen, which in the patent of Richards and Meehl is permanent, can, in my improved spark-arrester, be elongated or contracted at pleasure, suitable appliances being employed to fasten the parts together after adjustment.

The upper flanged edge of the flaring portion of the screen is united to the flaring portion of the outer casing of the chimney, as shown in the drawing, so that there can be no avenue of escape for the sparks excepting through the said screen.

A sleeve, H, which I prefer to make of the tapering form represented, is so fitted to the interior of the chimney that it can be readily adjusted vertically therein, for it is important that the annular space *x* should, in some instances, be of a larger area than others, as the volume of exhaust steam differs in different locomotives.

After the sleeve has been adjusted to a position which insures the best results, it may be secured to the chimney by bolts or other suitable fastenings.

In the modification, Fig. 2, both parts of the screen are corrugated for the purpose of increasing the number of perforations and affording additional vents for the escape of the steam, and also for adding to the strength of the screen.

The obstruction in this modification is made in the form of an inverted many-sided cone, instead of being round, as in Fig. 1, and the sleeve is roughened internally so as to disintegrate the sparks which are impelled against it.

Both the obstruction and cone, in fact, admit of being made of various shapes without interfering with the object to be attained.

The sparks, diminished both in bulk and quantity, owing to the presence of the obstruction in the smoke-pipe, are disposed of in a manner which will be readily understood without explanation.

I claim as my invention—

1. The combination, with a locomotive-chimney, of the obstruction F, and a screen constructed for elongation and contraction, substantially in the manner described.

2. The combination, with a locomotive-chimney, of the obstruction F and sleeve H, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. W. WAITT.

Witnesses:

WM. A. STEEL,
HARRY SMITH.