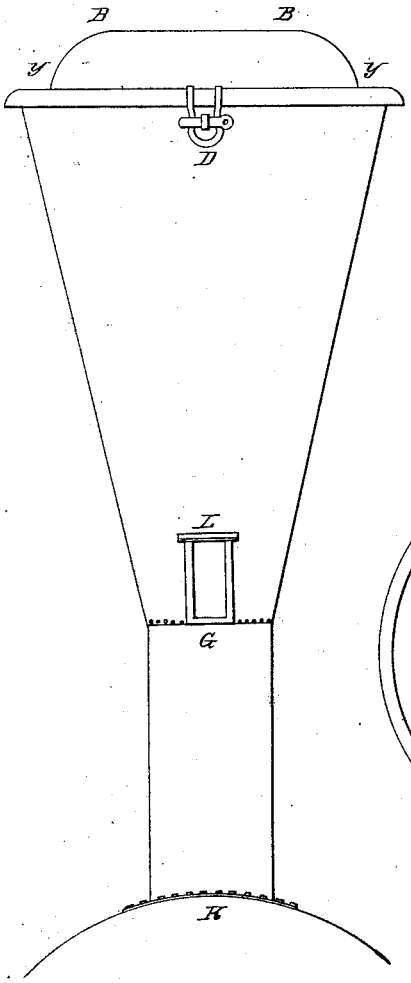
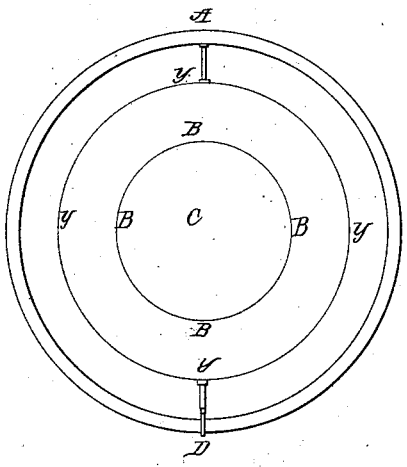
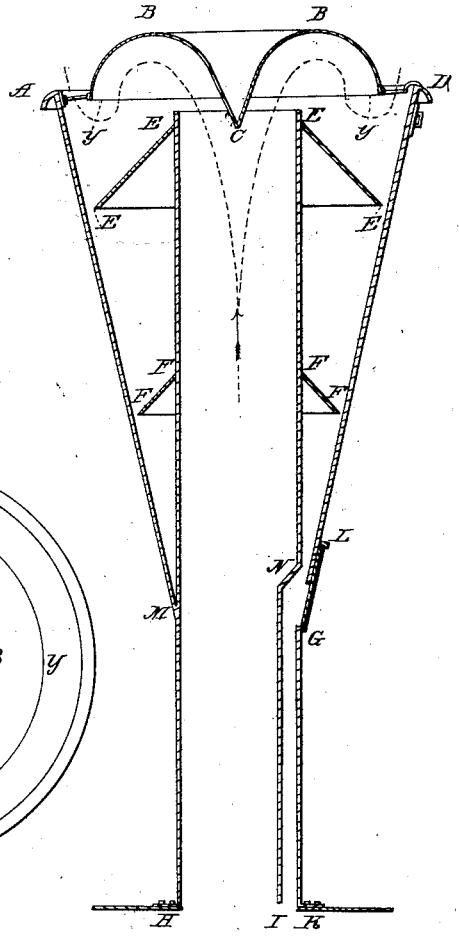
Smith & Van Lone,

Spark Arrester,

No. 793, Patented June 20, 1838.







Witnesses
Jos. C. W. Bowdoin
John Brady

Inventor
D. L. Smith
William J. Van Lone

UNITED STATES PATENT OFFICE.

T. L. SMITH AND W. J. VANLONE, OF NEWARK, NEW JERSEY.

SPARK-CATCHER.

Specification of Letters Patent No. 793, dated June 20, 1838.

To all whom it may concern:

Be it known that we, TIMOTHY L. SMITH and WILLIAM J. VANLONE, both of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Spark-Catcher; and we do hereby declare that the following is a full and exact description thereof.

The nature of the invention consists in attaching the apparatus hereinafter described to the ordinary chimney of a locomotive or other boiler in which fire heat is used for the purpose of generating power.

To enable others skilled in the art to make and use our invention we will proceed to describe its construction and operation and first when used on locomotive boilers.

The chimney of a locomotive consists of two pipes K, H, E, E, and A, D, M, G. Over these pipes is placed a crown Y, B, C, B, Y, as represented in the drawings thereto annexed, this crown is not so large in circumference as the outside pipe and is fastened to it and kept in its position by a hinge or other convenient means at A and by a clasp and pin or other convenient means at D. This crown is composed of an inverted cone B, C, B, whose apex when in its proper position reaches just into the inner pipe and lies in the axis at the base of the cone the irregular figure, B. Y, B, Y, is fastened having a shape substantially as represented in the drawing and suitable for the object hereinafter described. The sides must have a flare that would cause them if produced, to intersect the outer pipe about 18 inches from the top.

On the inner pipe two inverted funnels, E, E, E, E, and F, F, F, F, are fastened, their sides being at an angle of about 45 degrees with the said pipe. These angles may be altered according to the judgment of the builder for each different boiler; in the inside of the inner pipe is the ordinary tube N, K, I, of convenient size for connecting the outside pipe with the smoke box. There is a sliding or other door L, G, in the outside pipe to enable the engineer to clear the tube or lower part of the pipe if it should become clogged by the cinders or sparks.

The operation of this invention is as follows: The smoke and sparks from the boiler and the steam from the engine pass up the ordinary pipe K, H, E, E, then striking against the sides of the cone B, C, B, C, they are forced around the curve B, Y, and take a downward direction, passing beneath the funnels E, E, F, F. Here the sparks from their greater gravity are separated from the smoke and steam and fall to the bottom of the outside pipe whence they are shaken down, by the motion of the machine, through the tube N, G, into the smoke box; the smoke and steam rise and pass out through the opening between the crown and the outside pipe.

When used on boilers other than locomotive and which have not the outside pipe A, D, G, M, that must be first attached to the ordinary chimney at any convenient height above the boiler;—in other respects the apparatus is the same.

If it is found that the draft of the boiler is injured by the apparatus the upper funnel E, E, E, E should be removed and that will remedy the difficulty.

What we claim as our invention and for which we desire a patent is—

The combination of the apparatus above described, with a locomotive or other boiler in which fire is used to generate power; we do not claim the invention of any of the parts separately, but we claim the exclusive right to this apparatus complete or with the omission of either of the funnels E, E, E, E, and F, F, F, F.

T. L. SMITH.
WILLIAM J. VANLONE.

Witnesses:
G. R. J. BOWDOIN,
JOHN BRADY.