A. TALBOTT.
Spark-Arrester.

No. 214,966. Patented April 29, 1879.

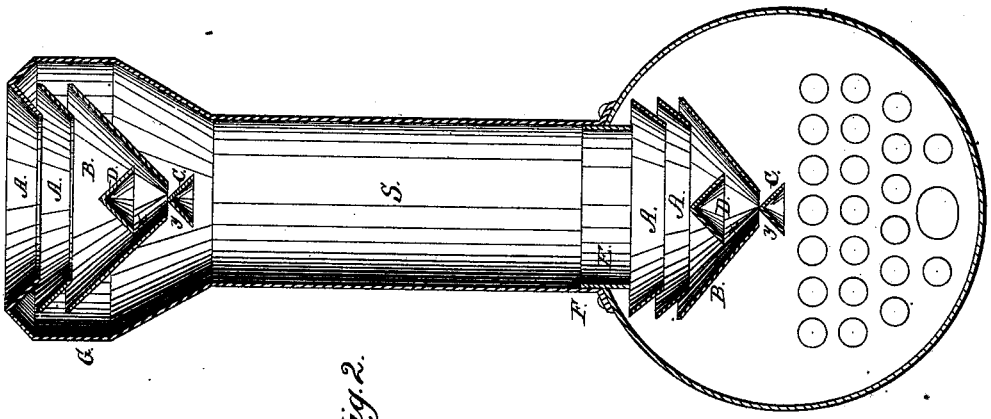

Fig. 2.

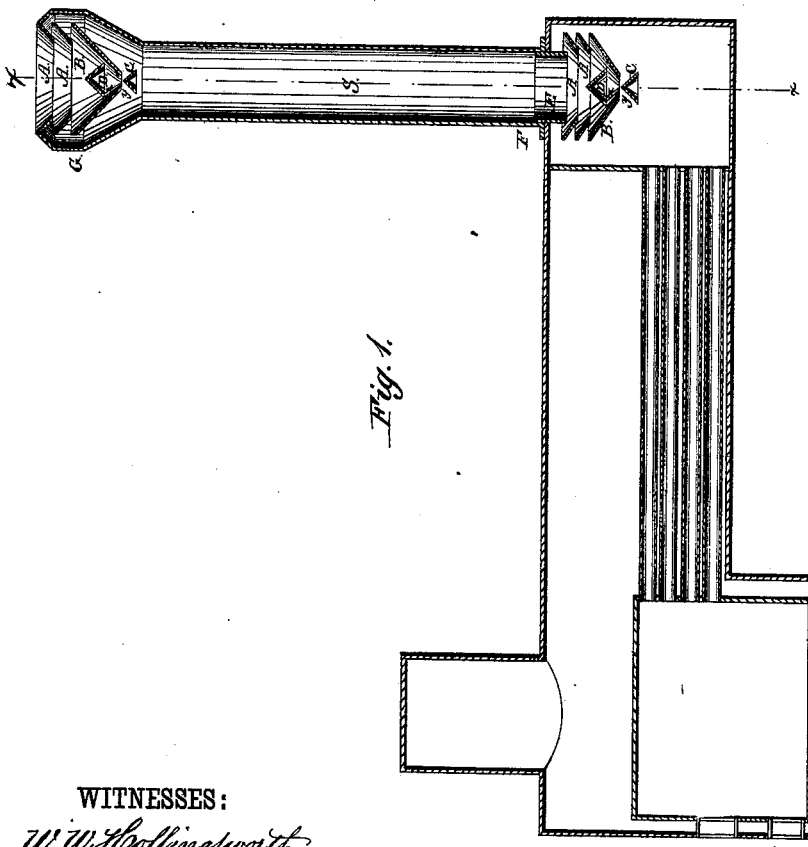

Fig. 1.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ALLAN TALBOTT, OF RICHMOND, VIRGINIA.

IMPROVEMENT IN SPARK-ARRESTERS.

Specification forming part of Letters Patent No. **214,966**, dated April 29, 1879; application filed March 27, 1879.

To all whom it may concern:

Be it known that I, ALLAN TALBOTT, of Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Improvement in Spark-Arresters; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention consists in an improvement in means for arresting sparks of fire as they issue from the furnace of steam-boilers, and preventing them from passing from the stack into the open air more perfectly than heretofore, as hereinafter fully described, and subsequently pointed out in the claim.

The accompanying drawings, forming part of this specification, show, in Figure 1, a longitudinal section of a locomotive tubular boiler with my invention attached in the smoke-box, or, if preferable, at the top of the stack, as shown, and as circumstances may sometimes require. Fig. 2 is an enlarged cross-section of the same through the line *x x*.

A represents a conical-shaped ring or rings, put together, forming annular spaces, of such number and size as the area of the stack to which it is to be applied may require. B is a conical-shaped basin or bottom, with an aperture in its center of about two inches diameter. C is a small conical hood, extending into the aperture so as to partially close it, leaving an annular space of about half an inch wide, as shown at *y*. D is another conical hood, of a little larger size, covering the aperture on the inside, but leaving an annular space of about half-inch wide between its edge and the bottom D, as shown at *x*.

When the invention is applied in the smoke-box, the cylinder E is used to connect it with the hat F, over which the smoke-stack fits; and when applied in the top of the smoke-stack, or at any intermediate point of the stack, an ordinary jacket or swelled head, G, is used to incase it.

Its operation is as follows: The gas, smoke, and sparks, as they pass from the boiler, are drawn rapidly through the annular spaces formed by the ring or rings A and bottom B, and are turned downward; but the sparks, being heavier than the current of gas or smoke in which they are traveling, are thrown down into the bottom B, and as there is no counter-current to lift them they pass out through the openings at *x* and *y*. Should they by chance, after passing out at *x* and *y*, be again taken up by the current, they will again be deposited in the bottom B, and this will be repeated until they are entirely consumed or extinguished.

The conical hoods C and D are so arranged that while they allow the sparks that are deposited on the inside of the basin to pass out freely they are prevented from passing inward. The smoke passes out of the top of the stack, leaving it entirely free from ignited sparks.

The advantages which I claim are, that while it is a perfect spark-arrester it does not destroy the draft or interfere with cleaning the tubes, and requires no damper, as is usual for direct draft when raising steam, and which are liable to be left open and sparks pass through. It does not require a pan of water for the sparks to pass over to extinguish them, and which, by condensation, destroys the draft, or from neglect loses its efficiency. It will not choke up, and requires no cleaning. No compartments for the deposit of sparks, or doors or openings to clean them out, are required other than the ordinary smoke-box. It is durable and simple in construction, and can be applied to any make of boiler now in use without incurring great expense.

What I claim is—

The inclined ring or rings A, the basin B, and the hoods C and D, inclined reversely to the basin and located upon opposite sides of the same, all combined substantially as and for the purpose set forth.

ALLAN TALBOTT.

Witnesses:
MARCELLUS SMITH,
CHARLES TALBOTT.