

W. STAMP.  
Spark-Arrester.

No. 164,662.

Patented June 22, 1875.

Fig. 1.

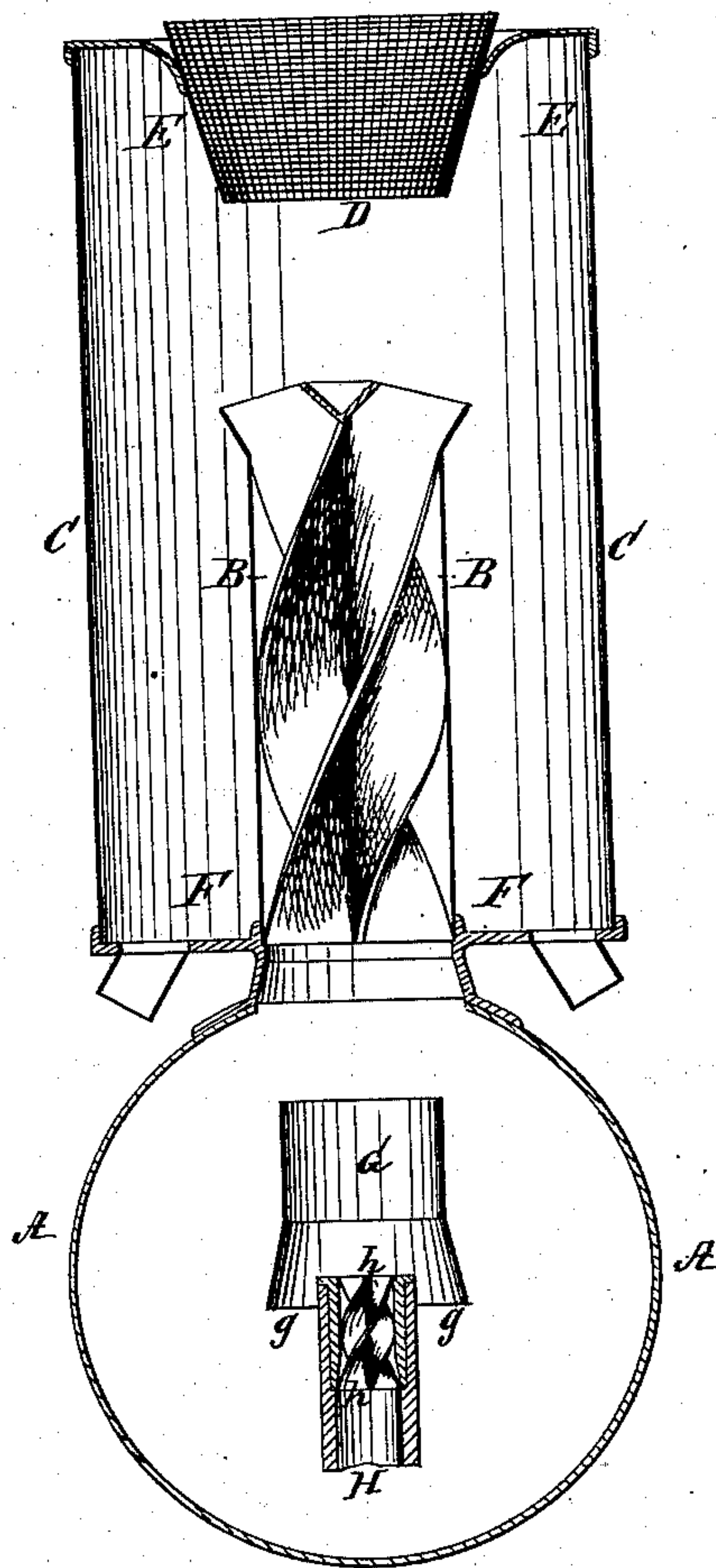
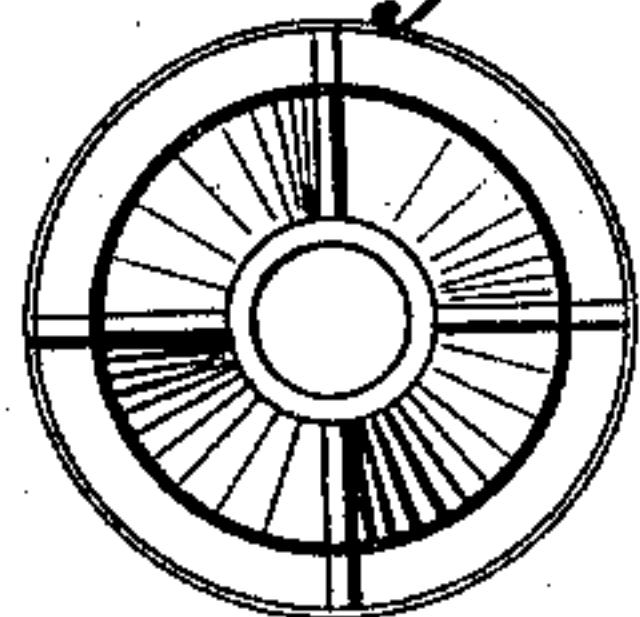


Fig. 2.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

WILLIAM STAMP, OF SUSQUEHANNA DEPOT, PENNSYLVANIA.

## IMPROVEMENT IN SPARK-ARRESTERS.

Specification forming part of Letters Patent No. **164,662**, dated June 22, 1875; application filed November 21, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM STAMP, of Susquehanna Depot, county of Susquehanna and State of Pennsylvania, have invented a new and useful Improvement in Exhaust-Pipes and Smoke-Stack; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of this application, in which—

Figure 1 is a sectional front elevation, and Fig. 2 a horizontal section in line *x x*, Fig. 1.

The invention relates generally to the smoke-stacks of locomotive-engines, wherein are employed means to prevent the emission of cinders and sparks by the exhaust steam used in augmenting the up draft in the smoke-stacks. My object is effectually to arrest the sparks and cinders without materially retarding or decreasing the force of the exhaust.

The novel means which I employ for this purpose will first be fully described in connection with all that is necessary to a full understanding thereof, and then pointed out in the claim.

A represents the rear portion of a locomotive-boiler, having the inside pipe B, larger surrounding case C, and cone-shaped wire-gauze outlet D. The latter diminishes downwardly so as to allow free egress to the expanding gases, and is entirely open at both

ends, the reticulations being only on the sides. I make the pipe B which conveys the combined exhaust steam and products of combustion into the outer case C, with a spiral channel, groove or recess, or a series of them, the top outlet of each being inclined toward the space E that surrounds the wire-gauze cone D. By this means the sparks and cinders, which are heavier than the smoke, are ejected with considerable centrifugal force. This causes most of them to strike the upper part of case, whence they fall into the circumjacent space F. Here they may accumulate to the extent of eight or ten bushels, and be discharged at each watering-station, or disposed of at shorter intervals in any other suitable way.

Instead of the spirally-channeled inside pipe B being arranged in the smoke-stack, it may be arranged in the smoke-box, in which case it would be fitted in the end of the exhaust-nozzle *h*, thus effecting the same result in substantially the same way.

What I claim is—

A smoke-pipe spark-arrester, consisting of the spirally-channeled inside pipe B, outside pipe or case C, and outlet-tube D, combined as and for the purpose set forth.

WILLIAM STAMP.

Witnesses:

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G. H. HOUGLAND.