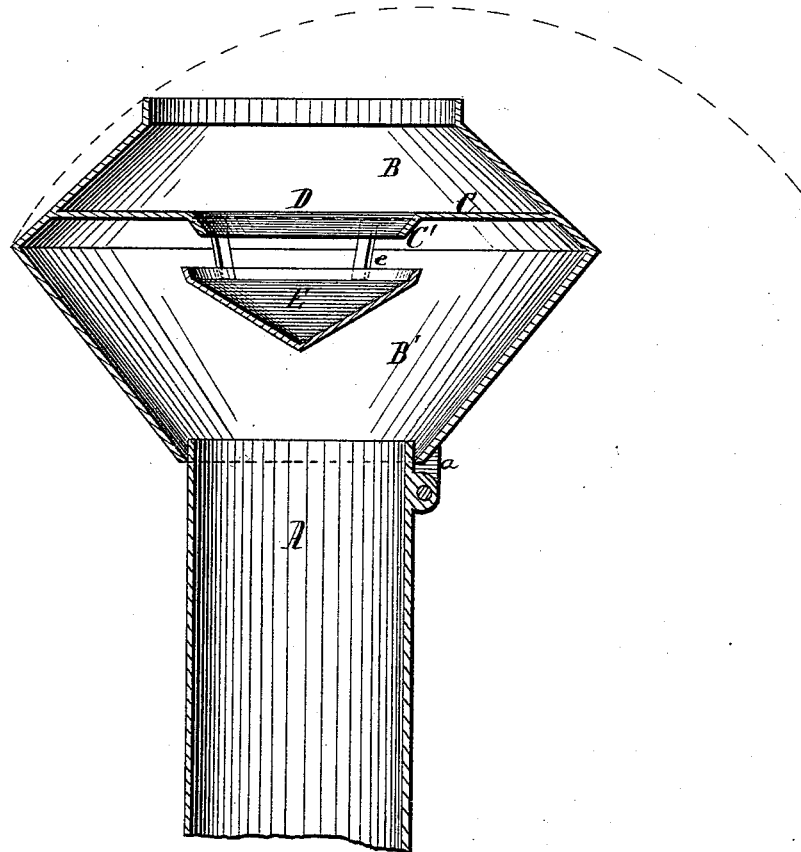


A. J. HOAG.  
Spark-Arresters.

No. 212,002.

Patented Feb. 4, 1879.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

ANDREW J. HOAG, OF BATTLE CREEK, MICHIGAN.

## IMPROVEMENT IN SPARK-ARRESTERS.

Specification forming part of Letters Patent No. **212,002**, dated February 4, 1879; application filed December 17, 1878.

*To all whom it may concern:*

Be it known that I, ANDREW J. HOAG, of Battle Creek, county of Calhoun, State of Michigan, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which represents a vertical section through the bonnet and a portion of the smoke-stack, showing my improvements.

My invention consists in a novel construction and arrangement of flanged partition-plate or deflector, having a central opening, in connection with the bonnet and an inverted cone suspended therefrom, and forming a condensed-steam reservoir or dish, into which the larger cinders are thrown or deflected by the flanged partition, and thus extinguished.

It further consists in combining the perforated and flanged deflector and the cone connected therewith with a hinged hood or bonnet, whereby the cone is adapted to be tilted or dumped for discharging its contents, as herein after explained.

In the accompanying drawing, A represents the smoke-stack, and B B' the hood or bonnet, the latter made in the usual form of two frustums of cones, united at their bases. The bonnet thus formed is provided on its lower end, at one side, with pendent perforated lugs or ears *a*, adapting it to be hinged or pivoted to corresponding lugs or ears on the smoke-stack.

The upper part or frustum, B, of the bonnet, above its point of junction with the lower part, B', is provided with a horizontal partition-plate or deflector, C, having a large central opening, D, through it for the escape of the smoke and exhaust-steam.

The edge of the plate C surrounding the central opening is bent downward, forming an inclined or curved pendent flange, C', annular in form, and inclining inward in such manner as to form an oblique angle with the disk or partition-plate C.

E is an inverted cone or conical dish, suspended by rods or straps *e* from the flange C' or plate C, with the flange or ring C' overhanging its open upper end, but with sufficient space between them for the ready passage of the smoke, cinders, &c.

It will be seen that by the arrangement of parts above described the smoke, cinders, and exhaust-steam escaping from the smoke-stack will be deflected outward by the cone, and the smoke, steam, and lighter particles of cinders will thence follow readily the direction of escape between the upper end of the cone and the flange C', and thence up through the opening D and out, while the heavier portions of cinders, unable to follow the abrupt turns or movements of the smoke and exhaust-steam, will be thrown up against the plate C and flange C', and their progress being thus retarded, they will be deflected, and drop or be thrown into the conical dish E, together with the exhaust-steam condensed in its passage and dropping into the dish, and which serves effectually to extinguish the cinders.

By setting the plate C above the junction of the two parts of the bonnet the cinders, &c., coming in contact with the inwardly-inclined walls of the upper part, will be deflected inward, and, coming in contact with the inwardly and downwardly inclined flange C', will be thereby thrown into the dish E and extinguished.

By making the cone E and its supports separate from the smoke-stack, and hinging the bonnet to the stack, as described, the cone can be readily dumped whenever it becomes filled by simply turning the bonnet over on its hinge.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The flat deflecting-plate or partition C, attached above the junction of the two parts B B' of the bonnet, and provided with the pendent flange around the central opening, and with pendent supports for the conical dish E, applied to and operating in combination with the bonnet, substantially as described.

2. The cone or dish E, suspended from the flanged centrally-perforated plate C, in combination with the hinged bonnet, arranged and operating substantially as described.

ANDREW J. HOAG.

Witnesses:

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