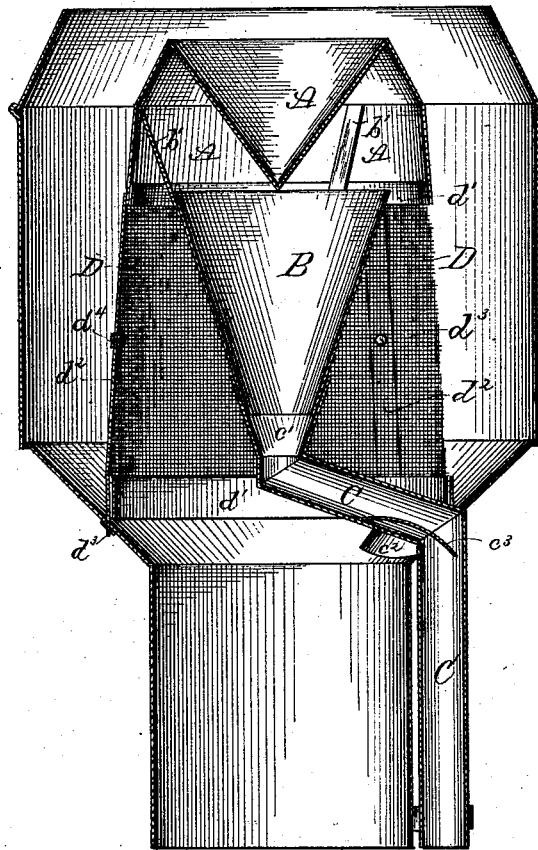


(No Model.)

A. BLAKE.  
SPARK ARRESTER.

No. 261,657.

Patented July 25, 1882.



WITNESSES

*J. C. Clark.*  
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# UNITED STATES PATENT OFFICE.

ANDREW BLAKE, OF PERU, INDIANA.

## SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 261,657, dated July 25, 1882.

Application filed May 4, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW BLAKE, a citizen of the United States, residing at Peru, in the county of Miami and State of Indiana, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to spark-arresting smoke-stacks for locomotives; and it consists in the construction and arrangement of its several parts, as will be hereinafter fully described, and pointed out in the claims.

The drawing shows a vertical sectional view of the smoke-stack, in which—

A is the spark-deflector; B, the spark-receiver, which has supporting-straps  $b'$ .

C is the spark-pipe. It is provided with a funnel-shaped top,  $c'$ , and has a hood-shaped projection,  $c^2$ , over an opening into the pipe, as shown.  $c^3$  is an inside steam-deflector.

D is an upright barrel-shaped netting, and is provided with inside and outside framings,  $d'$ , at its base and an inside ring at its top. It has vertical straps disposed around its exterior surface. In the arrangement of the interior portions of the device the framings  $d'$  rest upon the inclined part of the stack above the neck portion, one ring being inside, the other outside, and both firmly bolted together in this position. The upright or vertical straps are bolted, near their base, to the outer side of the rings, and project downwardly through openings in the swell portion of the stack a sufficient distance to enable them to be securely fastened on the outside thereof and the netting held fast in its position, as shown. The upper ends of the straps  $d^2$  are bolted to the outer side of the deflector A and maintain it in proper position. The netting is also bolted to the straps, as shown at  $d^3$ , in order to more securely brace the structure.

The deflector A is cup-shaped, with its bottom falling inwardly, cone-like, to a level with the edge of the cup. The upper end of the netting is fastened to the inside of the rim of the deflector by means of the inside surrounding-ring and the bolts.

The spark-receiver B is suspended from the deflector by means of the hangers  $b'$ , and at its lower and smaller end rests within the funnel-shaped top  $c'$  of the pipe C, as shown.

The pipe C passes through the stack in the swell just above the neck and extends downwardly, opening into a receptacle secured in a convenient place, or opening into the air at some point where the escape of the sparks will cause the least annoyance.

The hood-shaped projection  $c^2$ , the opening under it into the pipe C, and the deflector  $c^3$ , with the exhaust-steam, operate as a blower in a downward direction through the pipe C and prevent any accumulation or clogging of sparks or cinders in the receiver B or pipe C.

The advantages of my stack are in the ease of removal when required for inspection or repair of the deflector A, netting D, and receiver B, which may be accomplished by loosening the fastening at  $d^3$ .

The upright position of the netting prevents a direct blow of the sparks upon it, and, while admitting free egress for steam and smoke, will last much longer than if subjected to the direct action of the sparks.

In the operation of the arrester a blast from the exhaust-nozzle lifts the sparks upward into the body of the arrester, when the succeeding blast forces the sparks upwardly against the deflector, from whence, by the force of gravity and the suction caused by the draft in the pipe C at the opening under the deflector  $c^3$ , the sparks are quickly conveyed outside the stack, as hereinbefore described.

What I claim is—

1. In a spark-arrester, the upright cylinder-shaped netting D, provided with the rings  $d'$  at its base, and with upright straps  $d^2$ , adapted to support the deflector A, the deflector A and receiver B, provided with hangers  $b'$ , its lower end resting within the funnel-shaped top  $c'$  of the pipe C, and the pipe C, provided with the funnel-shaped top, all combined to operate substantially as shown and described.

2. In a spark-arrester, the netting D, deflector A, receiver B, and pipe C, provided with funnel-shaped hood  $c^2$ , and deflector  $c^3$ , whereby a downward draft is maintained through the receiver B and pipe C, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW BLAKE.

Witnesses:

L. D. ADKISON,  
M. E. DAVEY.